

**Results of the Meteorological Observations taken at the Alipore Observatory from
2nd to 8th September 1883.**

Month.	Date.	Maximum in sun.	Number of hours of bright sunshine.	Mean pressure barometer at 32 Fahr.	TEMPERATURE				HYGROMETRY				WIND.		Miles recorded	Rain.	WEATHER.
					Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Prevailing direction.				
1883.		°		Inches.	°	°	°	°	°	Inches	°	%				Inches	
Sept.	2nd	148.5	3	29.590	82.4	86.9	7.0	79.3	79.3	0.960	78.0	87	SE and ESE	...	180	0.09	Cloudy, o, g, d, p, tr
"	3rd	146.5	5	.603	81.8	86.7	8.0	78.7	78.9	.953	77.8	88	SE, SSE and SE by S	...	202	0.66	Partially cloudy, o, g, d, p.
"	4th	156.4	5	.603	81.5	88.1	10.9	77.2	79.1	.964	78.1	90	SE by S and SSE	...	73	0.39	Chiefly cloudy, o, g, d, p, t.
"	5th	154.0	6	.545	82.2	87.7	9.2	78.5	79.4	.969	78.3	88	E by S and SSW	...	119	0.35	Chiefly cloudy, o, g, d, t, p.
"	6th	160.5	10	.513	82.5	83.1	9.9	78.3	78.7	.929	77.0	84	ESE and SE	...	193	0.01	Partially cloudy, d.
"	7th	148.5	9	.506	81.9	87.3	9.1	78.2	78.4	.928	76.9	85	ESE and SSE	...	280	0.11	Partially cloudy, o, d, p.
"	8th	138.5	2	.561	81.3	85.8	7.3	78.5	78.3	.930	77.0	87	SE by S and SW by S.	...	105	0.02	Cloudy, o, g, d.

The mean pressure of the seven days ... 29.560

The average pressure of the corresponding period for 24 years, S. G's Office ... 29.651

The total number of hours of bright sunshine of the seven days ... 40

The mean temperature of the seven days ... 81.9

The average temperature of the corresponding period for 24 years, S. G's Office ... 83.4

The extreme variation of temperature during the seven days ... 10.9

The maximum temperature during the seven days ... 88.1

The highest velocity of the wind in one hour during the seven days ... 22

The highest pressure of the wind on one square foot during the seven days ... ?

The mean relative humidity during the seven days ... 87

The average relative humidity of the corresponding period for 24 years, S. G's Office ... 86

The total fall of rain from 2nd to 8th September 1883 ... 1.52

The average fall of the corresponding period for 24 years, S. G's Office ... 2.97

The total fall from 1st January to 8th September 1883 ... 44.05

The average fall of the corresponding period for 24 years, S. G's Office ... 51.51

The mean pressure, temperature, &c., are deduced from the traces of the Barograph and Thermograph, and from observations made at 6h, 10h, 16h, and 22h.

The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the standard Newman's No 86 formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV and V of the official tables computed in the Meteorological office, and based on Regnault's modifications of August's formula.

The direction of the movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

o overcast, g gloomy, d drizzling rain, t thunder, p passing temporary showers, tr lightning reflection.

ALEXANDER PEDLER,

METEOROLOGICAL OFFICE, INDIA,
The 10th September 1883.

For Meteorological Reporter to the Government of India.

Abstract of the results of the Thermometric Observations taken at the Meteorological Office, Chowringhee, in the month of August 1883.

		°		Date.
The mean temperature during the month	81.8	
The highest temperature during the month	91.3	11th
The lowest temperature during the month	75.0	1st
The range of temperature during the month	16.3	
The mean daily range of temperature during the month	10.1	
The greatest range of temperature in one day during the month	14.4	14th
		%		
The mean humidity during the month	89	
		Inches.		
The mean vapour tension during the month	9.68	
The total rainfall of the month	8.75	
The greatest fall in 24 hours	1.83	8th
		Days.		
The number of rainy days in the month	24	

ALEXANDER PEDLER,
For Meteorological Reporter to the Govt. of India.

METEOROLOGICAL OFFICE, INDIA,
The 10th September 1883.

Results of the Thermometrical Observations taken at the Meteorological Office, Chowringhee, from 2nd to 8th September 1883.

MONTH.	Date.	TEMPERATURE.				HYGROMETRY.				Rain.
		Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	
1883.		°	°	°	°	°	Inches.	°	%	Inches.
September	2nd	82.5	88.3	8.4	79.9	79.9	.988	78.9	89	0.08
"	3rd	80.3	87.3	8.8	78.5	78.6	.956	77.9	92	0.43
"	4th	80.8	89.7	11.5	78.2	79.7	1.001	79.2	96	0.84
"	5th	82.5	89.8	10.9	78.9	80.0	.992	79.0	89	0.05
"	6th	82.6	89.1	10.5	78.6	79.1	.949	77.6	85	0.46
"	7th	82.0	88.3	8.7	79.6	78.8	.943	77.5	86	0.13
"	8th	81.0	85.8	7.0	78.8	78.7	.951	77.7	90	Nil

The mean temperature of the seven days ... 81.7
The extreme variation of temperature during the seven days ... 11.6
The maximum temperature during the seven days ... 89.8
The mean relative humidity during the seven days ... 90

The total fall of rain from 2nd to 8th September 1883 ... 1.94

The mean temperature and humidity are obtained by applying to the mean of the 10h, 16h, and minimum readings a correction dependent on the range, and derived from the hourly observations at the Surveyor-General's Office, Chowringhee, in past years.

METEOROLOGICAL OFFICE, INDIA,
The 10th September 1883.

ALEXANDER PEDLER,
For Meteorological Reporter to the Govt. of India.

Report on Traffic of the East Indian Railway during four weeks ending 28th July 1883.

The approximate figures for the period are as follow :—

	Coaching.		Goods.		Total.	Materials carried on Revenue account, including maintenance.		
	No.	Rs.	Mds.	Rs.	Rs.	Mds.	Rs.	
1883	807,006	8,14,295	67,50,695	25,85,593	33,99,888	25,72,000	1,24,453	
1882	702,078	7,50,155	69,35,896	24,85,006	32,65,221	23,86,234	94,638	
Increase	104,928	31,140	...	1,00,587	1,31,667	1,86,766	29,815	
Decrease ... ..	...	...	1,85,201	...	...	...	...

Increases—

15 per cent. in Passengers.
4 „ Coaching earnings.
4 „ Goods „

Decrease—

3 per cent. weight of goods.

COACHING.

The increase in 3rd class passengers is chiefly due to the large number of passengers travelling short distances at the Howrah end of the line owing to the festival of "Ruthjatra," when we carried 25,000 passengers to and from Serampore station, and to labourers journeying to Calcutta for employment.

GOODS.

The variation in the result of the goods traffic for the period, i.e. an increase in receipts with a decrease in weight carried, is attributable to the falling off in construction materials, seeds, and pulses, of which we carried large quantities last year for comparatively low freights.

The following were the principal staples affected during the month :—

INCREASES.	
Coal, upwards.	Foreign railway materials.
„ downwards.	Salt.
Wheat.	Tobacco.
Gunny.	
DECREASES.	
Cotton.	Iron.
Commissariat and Ordnance stores.	Seeds.
Pulses.	

REMARKS.

Coal, upwards	...	Mds.	31,460	Rs.	12,870
„ downwards	...	„	91,520	„	14,240

The demands for up-country stations and foreign railways were on a more favourable scale.
The demand in the Calcutta market continues.

Wheat	...	Mds.	3,30,800	Rs.	1,38,520
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The advices from home of the harvest prospects having been favourable, the demand which we had experienced in the previous months moderated considerably, so that the average weight carried per week, as compared with June, declined from 20,000 to 11,500 tons.

Gunny	...	Mds.	14,100	Rs.	15,560
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Consequent upon the increase in the grain traffic.

Foreign Railway materials	...	Mds.	1,28,220	Rs.	1,11,460
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The extensions of the O. and R. and the C. and F. Railways, and the construction of the Bengal and North-Western and Rohilkund and Kumaon Railways, are furnishing us with material for carriage in large quantities, which will probably last for some time longer.

Salt	...	Mds.	2,17,490	Rs.	62,010
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For some months past the salt traffic has been normal, and this increase must be attributed to stocks having become exhausted.

Tobacco	...	Mds.	17,050	Rs.	13,620
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This appears to be a fluctuation only, due to increased demands.

DECREASES.

Cotton	...	Mds.	16,470	Rs.	22,610
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Quoting from the Calcutta market report :—" Cotton is dull and the season may be considered as over."

Commissariat Stores	...	Mds.	6,620	Rs.	19,470
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Ordnance	...	„	5,390	„	14,380
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This falling off may be ascribed to the operations going on last year in connection with the Egyptian expedition.

Pulses	...	Mds.	1,18,770	Rs.	32,130
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This decrease is shown at stations between Mokameh and Patna Ghât, and is owing, it is said, to the absence of demand in Calcutta.

Iron	...	Mds.	21,050	Rs.	21,020
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There appears to be an absence of demand.

Seeds	...	Mds.	3,76,160	Rs.	1,41,590
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A falling off in demand for export will account for this decrease.

The train mileage for the period has been, excluding maintenance and locomotive coal train mileage—

	Coaching.		Goods.		Total.
		Rs.		Rs.	Rs.
1883	...	2,49,132	...	5,25,153	7,74,285
1882	...	2,12,423	...	4,54,229	6,66,652
Increase	...	36,709	...	70,924	1,07,633
Decrease

Earnings per train mile, excluding materials carried on Maintenance and Revenue account—

	Coaching			Goods.			Total.		
	Rs. A. P.			Rs. A. P.			Rs. A. P.		
1883	3	4	4	4	14	9	4	6	3
1882	3	11	0	5	7	6	4	14	5
Increase									
Decrease	0	6	8	0	8	9	0	8	3

Shunting mileage increase—hours 67.

EAST INDIAN RAILWAY.

Statement showing the Totals and Increases and Decreases of Staples during four weeks ending 28th July 1883.

STAPLES.	WRIGHT.		AMOUNT.		Net.			
	1883.	1882.	1883.	1882.	Increase.		Decrease.	
	Mds.	Mds.	Rs.	Rs.	Mds.	Rs.	Mds.	Rs.
Beer, Commissariat	3,200	4,200	980	1,900	1,090	1,040		
" not Commissariat	2,090	2,620	3,780	3,750			70	30
Betel-nuts and leaves	9,120	11,590	9,570	12,930	2,470	3,360		
Boots and shoes	1,980	2,290	2,700	3,220	310	520		
Brass and brassware	17,310	15,140	17,250	14,150			2,190	3,100
Bricks	5,450	5,840	2,020	1,910	360			110
Coal, up	3,74,120	4,05,580	1,85,010	1,07,880	31,460	12,870		
" down	12,58,970	13,50,490	1,77,390	1,01,630	91,520	14,240		
Copper and copperware	9,980	10,220	14,830	15,700	240	870		
Cotton	40,000	24,130	80,140	27,530			16,470	22,610
" twist	14,090	12,060	18,410	14,480			2,030	3,930
Dye-wood	4,090	5,440	5,310	3,000			1,250	1,780
Empty coops, &c.	13,270	6,360	4,790	3,440			6,910	1,530
Firewood	25,100	37,240	2,010	2,000	12,140	590		
Fruits	10,170	24,300	11,300	10,270	8,130	4,070		
Glass and glassware	5,250	4,430	5,210	4,300			820	910
Ghee and oil	30,720	36,370	31,200	33,140		1,940		
Government Commissariat stores	11,840	8,220	24,370	4,900			6,620	10,470
" Ordnance stores	21,150	15,780	43,870	29,490			5,390	14,380
" Barley	3,840	7,490	500	1,020	3,650	1,130		
" Oats	14,770	32,970	4,860	8,130	18,200	3,770		
" Rice	3,05,470	2,06,760	94,200	90,310			38,710	3,990
" Wheat	9,29,200	12,59,500	4,67,100	5,95,630	3,30,300	1,38,520		
" Other grains	1,52,970	1,55,120	28,460	36,130	23,150	7,670		
" Pulses of all kinds	2,41,990	1,23,220	68,620	30,490			1,18,770	32,130
Gunny	71,500	85,000	50,120	65,080	14,100	15,560		
Hides and horns	51,780	50,730	33,500	29,800			1,020	3,730
Indigo	810	820	1,130	1,140	10	10		
Iron	86,700	66,650	75,030	54,030			21,050	21,020
Jaggree	50,590	46,420	7,850	9,190	14,830	1,340		
Lac	25,110	24,420	13,120	13,240		120		
Minerals	97,560	72,530	16,220	12,960			34,730	3,300
Mowah flower	18,160	23,130	2,410	3,070	4,070	600		
Oil-cakes	12,400	12,010	2,540	2,350			390	190
Opium	2,900	3,940	3,950	4,960	1,040	1,010		
Paper	6,560	6,940	9,050	8,900	380			
Piece-goods	84,990	85,060	1,19,020	1,10,480			11,330	8,540
Railway materials, Construction account	8,05,020	3,68,910	13,730	4,670			4,36,110	9,000
" Foreign	70,360	1,98,580	69,620	1,71,080	1,28,220	1,11,460		
Roots	17,990	23,510	9,370	13,210	5,820	3,840		
Salt	4,62,980	6,20,440	1,10,300	1,82,000	2,17,400	63,010		
Saltpetre	47,300	38,910	23,230	20,630			8,300	2,700
Sends	11,43,220	7,67,380	4,59,250	3,17,670			3,76,160	1,41,580
Silk	1,940	1,990	2,590	2,480	50			110
Spelter	7,820	8,250	11,000	6,030			2,570	4,970
Spices	9,840	7,560	6,370	5,120			2,280	1,450
Stones	79,800	75,510	16,370	13,390			4,290	2,980
Sugar	1,08,320	96,940	81,590	27,070			12,890	4,520
Tea	1,810	2,450	3,180	3,730	620	560		
Timber	31,630	33,610	10,070	11,020	1,980	350		
Tobacco	64,720	83,770	81,920	45,540	17,050	13,620		
Turmeric	4,720	3,990	1,610	1,090		370		
Wines	5,390	4,910	8,160	7,780			480	880
Miscellaneous	1,26,760	1,29,420	1,10,990	1,13,740	2,660	2,750		
Total	69,24,910	67,54,970	25,17,330	25,14,610	9,32,240	4,05,130	11,02,180	3,06,450

URBAN BROUGHTON, Offg. Traffic Manager.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY.

Approximate Return of Traffic for week ended 1st September 1883, on 1,509 miles open.

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated.)	Total earnings.	TOTAL TRAIN-MILES RUN.		
	Number of Passengers.	Coaching receipts.	Weight carried.	Receipts.			Coaching.	Merchandise.	Total.
		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week...	181,370	1,84,098 8 0	22,30,532 30	5,90,913 7 8	17,813 1 3	7,02,224 0 11	60,922	121,093	182,015
Or per mile of railway	122 0 0	122 0 0	14,784 0 0	391 9 6	11 0 6	465 0 0	40 6	80 6	121 2
For previous 8 weeks of half-year	1,543,720	15,75,303 5 0	1,87,79,654 20	53,10,230 5 5	1,36,394 8 4	70,27,037 0 9	494,503	1,142,367	1,636,720
Total for 9 weeks	1,725,090	17,59,401 13 0	2,10,19,187 10	59,07,162 11 1	1,53,606 9 7	78,30,161 1 6	555,284	1,263,461	1,818,736
COMPARISON.									
Total for corresponding week of previous year	178,231	2,22,389 5 8	19,66,010 10	4,17,847 0 4	30,753 14 5	6,76,390 4 0	54,545	92,669	147,214
Per mile of railway corresponding week of previous year	117 0 0	147 0 0	13,066 0 0	277 5 1	24 0 4	449 4 11	47 0	61 0	108 0
Total to corresponding date of previous year	1,530,089	18,60,102 3 11	1,94,91,036 10	49,94,789 0 2	1,81,107 12 10	70,33,089 6 11	500,017	1,025,474	1,525,491

EASTERN BENGAL RAILWAY COMPANY.

Approximate Return of Traffic for week ended 1st September 1883, on 206½ miles open.

		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week...	58,765	27,890 0 0	2,28,174 0	53,516 0 0	581 0 0	81,087 0 0	7,035	7,013	14,048
Or per mile of railway	284	134 14 4	1,103 25	258 13 6	2 13 0	396 8 10	34 1	33 6	67 7
For previous 8 weeks of half-year	408,626	2,20,812 0 0	19,57,913 0	3,31,805 0 0	2,118 0 0	5,57,730 0 0	62,409	51,063	113,552
Total for 9 weeks	467,391	2,48,702 0 0	18,86,087 0	3,85,321 0 0	2,004 0 0	6,39,717 0 0	70,105	58,076	128,181
COMPARISON.									
Total for corresponding week of previous year	50,583	25,230 0 0	4,07,518 0	1,44,603 0 0	1,433 0 0	1,71,270 0 0	5,057	14,578	20,335
Per mile of railway corresponding week of previous year	295	146 14 5	2,371 29	841 15 2	8 5 8	997 3 3	24 6	61 0	85 6
Total to corresponding date of previous year	398,050	2,20,411 0 0	27,71,057 0	7,65,397 0 0	6,410 0 0	9,92,228 0 0	54,537	90,704	145,241

Includes Rs. 250 on account of Revenue stores.

EASTERN BENGAL RAILWAY COMPANY.

Miles open. Total.

Bengal Central Railway Approximate Return of Traffic for week ended 1st September 1883. { Ranaghat Section 20½ } 35
{ Dum-Dum „ 14½ }

		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week—									
Ranaghat Section	2,394	690 0 0	17,822 0	449 0 0	4 0 0	1,133 0 0	212	259	591
Dum-Dum do.	5,524	759 0 0	1,405 0	12 0 0	13 0 0	784 0 0	603	234	627
Or per mile of railway—									
Ranaghat Section	115	33 12 4	858 36	21 10 3	0 3 1	54 9 8	10 6	12 6	23 2
Dum-Dum do.	388	53 4 2	99 24	0 13 6	0 14 7	55 0 3	13 0	5 6	18 6
For previous 8 weeks of half-year—									
Ranaghat Section	19,659	5,486 0 0	1,03,483 0	1,828 0 0	57 0 0	7,371 0 0	2,337	2,310	4,647
Dum-Dum do.	53,521	6,205 0 0	21,346 0	124 0 0	77 0 0	6,470 0 0	4,752	2,034	5,015
Total for 9 weeks—									
Ranaghat Section	22,053	6,166 0 0	1,21,304 0	2,277 0 0	61 0 0	8,504 0 0	2,549	2,079	5,220
Dum-Dum do.	59,045	7,024 0 0	22,740 0	140 0 0	80 0 0	7,254 0 0	5,335	2,301	5,642
Total of both Sections	81,098	13,190 0 0	1,44,044 0	2,417 0 0	141 0 0	15,758 0 0	7,904	3,080	10,871

PATNA AND GYA STATE RAILWAY.

Approximate Return of Traffic for Week ended 25th August 1883, on 57½ miles open.

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated.)	Total earnings.	TOTAL TRAIN-MILES RUN.		
	Number of passengers.	Coaching receipts.	Weight carried.	Receipts.			Coaching.	Merchandise.	Total.
		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week	8,190	3,183 0 0	15,174 0	1,207 13 0	56 8 0	4,447 7 0	1,904	439	2,394
Or per mile of railway	143	55 10 4	265 20	21 1 10	0 15 10	77 12 0	33 2	7 4	40 6
For previous 7 weeks of half-year	56,538	27,887 1 0	1,67,631 0	12,679 3 0	2413 14 0	40,380 2 0	12,255	4,502	16,758
Total for 8 weeks	64,734	31,070 1 0	1,82,805 0	13,287 2 0	470 0 0	41,827 9 0	14,160	4,992	19,152
COMPARISON.									
Total for corresponding week of previous year	58,678	11,245 10 9	21,768 30	2,050 11 0	.....	10,296 5 9	11,587	11,517	23,104
Per mile of railway corresponding week of previous year	152	74 7 9	382 0	35 15 8	.....	110 7 5	20 0	20 0	40 0
Total to corresponding date of previous year	67,487	33,714 12 0	1,93,439 0	20,432 5 0	709 14 8	54,877 0 2	12,208	12,455	24,663

* Deducted number of passengers 63 and Rs. 15-13-0 on account of differences between the approximate and audited returns to week ending 25th July 1883.
 † Added mds. 1,141 and Rs. 48-15-0 on account of ditto ditto ditto.
 ‡ Deducted Rs. 63-14-0 on account of ditto ditto ditto.
 § Represents approximate figures, as audited figures are not obtainable.
 || Represents audited figures of the corresponding week of previous year.

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

Latest return received.	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1883.	Total decrease in 1883.	Percentage of increase or decrease.
			23rd July 1882.	21st July 1883.	To 22nd July 1882.	To 21st July 1883.			
1882.		Miles.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.
4th August	Northern Bengal	230	29,504 0 0	35,953 0 0	10,84,551 0 0	12,75,453 0 0	1,90,902 0 0	.....	+18
4th Do.	Tirhoot	166	10,614 0 0	14,413 0 0	3,76,276 0 0	4,63,993 0 0	87,657 0 0	.....	+23
21st July	Calcutta and South-Eastern.	56	2,425 0 0	4,475 0 0	1,60,783 0 0	1,73,260 0 0	66,477 0 0	.....	+62
4th August	Nalhati	27½	1,055 0 0	1,134 0 0	40,475 0 0	47,456 0 0	6,981 0 0	.....	+17
	Total	479½	43,599 0 0	55,975 0 0	16,08,085 0 0	19,60,133 0 0	3,52,047 0 0	.....	+22



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, SEPTEMBER 19, 1883.

OFFICIAL PAPERS.

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RESOLUTION ON THE GENERAL ADMINISTRATION REPORT OF THE BURDWAN DIVISION FOR THE YEAR 1882-83.

GENERAL DEPARTMENT.—MISCELLANEOUS.

Calcutta, the 15th August 1883.

RESOLUTION.

READ—

The General Administration Report of the Commissioner of the Burdwan Division for the year 1882-83.

MR. BEAMES, by whom the report is submitted, held charge of the division for the whole year, with the exception of a period of ten days near its close.

2. *Thurs.*—The Commissioner has given a full and interesting account of his tours, in the course of which he visited nearly the whole of the division, inspected all the district and most of the sub-divisional offices, and gave his personal attention to all matters of importance. Such of these as are noticed in the report, and call for special remark, will be considered in connection with those chapters of the report in which they are mentioned. The tours of the district officers were, except in Howrah, of sufficient length, and those of Messrs. Larminie and Wilson, in Burdwan and Midnapore, are specially commended for the good work done in the course of them. The Lieutenant-Governor is glad to notice the importance which the Commissioner attaches to well-planned and exhaustive tours by his subordinates, and to the submission

of full and intelligent diaries, and trusts that he will indicate to the Collector of Bankoora and other officers the points in which their tours fell short of a satisfactory standard. Mr. Rivers Thompson also agrees with the Commissioner as to the great value of spreading tours over all seasons of the year, and not restricting them to the cold-weather only. The officers in charge of Howrah during the year, Messrs. Armstrong and Buckland, spent between them only 39 days in camp. There is probably less cause for the detention of the District Officer at Howrah than there is in the case of other districts. The Commissioner should call on Mr. Buckland for an explanation of the small amount of inspection duty performed by him as soon as he returns to the district, and a similar explanation should be submitted to Government by Mr. Armstrong through the Board of Revenue. The tours of the Sub-Divisional Officers were on the whole satisfactory, though that of the Joint Magistrate of Serampore fell somewhat short of the standard laid down by Government.

3 *Weather and Crops.*—The rainfall, which was below the average of ordinary years in all districts except Hooghly, was intermittent and unequally distributed. On the low lands the rice crop was generally good, owing to the absence of floods; but it failed to a considerable extent on the high lands owing to the want of water. The general yield for the whole division is estimated at about 10 annas. Some 20,000 bigahs of land, on which the rice would otherwise have been very poor, were successfully irrigated from the Eden Canal in Burdwan. The winter crops were good, and the yield of sugarcane was especially fine in Hooghly, Burdwan, Beerbhoom, and Bankoora, in which districts the Beheea sugar-mills are being everywhere profitably introduced. The garden crops of Serampore and Jehanabad were good.

4. *Public Health.*—In Burdwan, Bankoora, and Beerbhoom fever was still prevalent, though it is believed to have been of a milder type than in the previous year. The fact that the mortality from this cause was greater than in 1881-82 is accounted for by the supposition that in Burdwan the registration of deaths has become more perfect, and that in the other districts the people were so debilitated by previous fever that a milder type of disease produced more fatal effects than a severer type at the commencement of the epidemic. The latter explanation does not appear altogether satisfactory, but there is some ground for believing with the Commissioner that the fever is abating. In Midnapore the recorded mortality from fever was practically unchanged; and it is noticeable that throughout the division the disease has been more prevalent on the high laterite soil than in the low-lying alluvial tracts. There was a certain amount of cholera in all districts. In Serampore the prompt measures taken by the Sub-Divisional Officer in burning the latrines at the Champdani Jute Mills, and erecting others on an improved plan in their stead, effectively checked a small epidemic in which 70 fatal cases had occurred. In the same sub-division the Magistrate successfully combated an outbreak of cattle-disease by segregating affected animals; but the Commissioner observes, apparently with much reason, that the almost universal conversion of pasturage into arable land has materially injured the stamina of cattle throughout the suburban districts. Vaccination has made satisfactory progress throughout the division, and the opposition to it is said to have died out almost everywhere. Tact, however, is needed on the part of the operators to render this state of things lasting, and such instances as those mentioned by the Commissioner, where efforts were made to vaccinate children suffering from fever, and where extra fees were levied on pretence of the necessity for conciliating Sitala, the goddess of small-pox, are eminently calculated to render the department unpopular, and should be sternly repressed. The Lieutenant-Governor would wish for further particulars regarding the levy of fees for the worship of Sitala, which the Superintendent of Vaccination is said to have justified, and desires that the Surgeon-General will favour him with a full report on the subject. It is possible that the progress of vaccination in other divisions may be hampered by similar obstacles. The progress made by drainage during the year has not been very satisfactory, and the subject will be further considered in the Public Works Department.

The material condition of the lower classes seems to be steadily improving throughout the division. Labour commands high prices, and there is a good

market for produce. The Commissioner is, however, probably right in considering that the struggle for existence among the middle classes is becoming more severe. This is the natural result of the rapid development of education, unaccompanied as it is by a tendency among the middle classes to betake themselves to any modes of earning their living, other than the necessarily limited resource of employment under the Government.

5. *Emigration and Immigration*.—The increase noticed last year in the number of emigrants registered in the Burdwan Division was maintained during that under review, 3,803 persons having been registered, against 3,650 in 1881-82. The increase, however, was confined to the districts of Bankoora, Beerbhoom, and Midnapore, which together supply much less than half of the total number recruited. From Hooghly and Howrah no emigration takes place in consequence of the large local demand for labour. The number recruited in Burdwan shewed a falling off from 2,499 to 2,123. The emigrants recruited in the Burdwan district are nearly all foreigners, who have come into it in the search for employment, and the decline in their numbers is ascribed to the fact that these men found employment ready to hand on the Burdwan water-works. It is probable also that much emigration of foreigners takes place from Burdwan without the intervention of the Act. The Commissioner is probably right in supposing that the increase of emigration from Bankoora and Beerbhoom is due mainly to the favourable reports brought back by returned emigrants and garden sardars, rather than to the poor outturn of the rice crop. Complaints against recruiters were rare during the year, and the Commissioner believes that the class from which emigrants are recruited is now quite able to take care of itself, and is not likely to be deceived into emigration. One proof of this may perhaps be found in the fact that the great majority of labourers decline to be placed on contract for more than three years, but there are not wanting indications which point to an opposite state of things.

The only immigration into the district is that of the Bauris, Sonthals, and Bhuniyas into the Raingunge sub-division for employment in the mines. The town of Raingunge also lies on the pilgrim routes to Gya, Baidyanath, and Puri, and has therefore a large floating population. The Lodging-house Act has recently been introduced.

6. *Prices of Food and Labour*.—From the following table it will be seen that a slight increase took place in every district in the price of rice, as compared with the previous year :—

DISTRICTS.	1880-81.		1881-82.		1882-83.	
	Rice per rupee.	Wheat per rupee.	Rice per rupee.	Wheat per rupee.	Rice per rupee.	Wheat per rupee.
	S. c.	S. c.	S. c.	S. c.	S. c.	S. c.
Burdwan ...	22 9	16 15	28 3½	15 14½	24 6½	15 9
Bankoora ...	25 9	15 6	31 8½	15 7	29 12	14 14
Beerbhoom ...	22 15	16 14½	28 10½	15 6	25 7	15 13
Midnapore ...	24 15½	11 6½	30 14½	14 10	28 12	13 8
Hooghly ...	19 7	14 14	36 11	14 11½	22 12	14 5
Howrah ...	19 13	15 2	22 10½	15 1½	21 1	13 5½

The fact that the prices of rice did not rise beyond the rate of 20 seers to the rupee, notwithstanding the bad crops of the year, is due to the large stocks which remained unsold from 1880-81. With the exception of a slight rise during the prevalence of fever in the Bishenpur sub-division of Bankoora, the price of labour remained unchanged.

7. *Manufactures and Mines*.—The account given in the Commissioner's report of the manufactures of the division is very interesting, and will be communicated to the Executive Committee of the Calcutta Exhibition, to whom it will probably be of use in enabling a collection of articles for exhibition to be made for Bengal. The tusser industry, though said to be in a declining state, and though

China silks are no doubt competing successfully with those of Indian manufacture, would appear to be capable of revival. The manufacture of cotton cloths is declining everywhere owing to the competition of European piece-goods, and the business of the cotton mills of Howrah is reported to be falling off owing to the rivalry of Bombay, which is more favourably situated in respect of the cotton-producing districts. The jute mills and presses of Howrah are, however, thriving. The demand for shell-lac and stick-lac continues brisk in Bankoora and Beerbhoom. Messrs. Burn and Co.'s potteries at Ranigunge are annually increasing in importance, and the cement works in the neighbourhood are said to promise well. The Barakhar iron works at Khendua, which have been purchased by the Government, and are under the management of Ritter Von Schwartz, are said to be briskly employed in producing cast-iron. The Commissioner's report contains an interesting extract from a report by the Sub-Divisional Officer of Ranigunge regarding the coal mines of that district, which will be further considered in the Public Works Department. The low price of coal is a general complaint among the owners of mines; but the consumption of Indian coal has to some extent revived, and it may fairly be presumed that the enhanced demand will, if it lasts, lead to the realization of higher prices.

8. *Trade and Commerce.*—The chief export from the division is rice, which is exported from all districts. In spite of the less abundant crop, the large stocks over from the previous year kept prices down within the division, and lessened the demand from other parts of India. The exports of coal from the Ranigunge sub-division is said to have amounted to 1,010,571 tons against 616,920 tons in the previous year. From the Bankoora district Rs. 2,72,000 worth of brass and bell-metal wares is believed to have been exported, against Rs. 2,50,000 worth in the previous year. The exports of stick-lac and shell-lac from the same district are estimated at 10,000 and 20,000 maunds respectively, against 6,000 and 13,000 maunds in the previous year. The Commissioner is of opinion that an improvement in the roads between the Chota Nagpur Division and Ghattal, through Bankoora and Midnapore, would do much to develop the trade of Southern Bankoora, which lies with Calcutta *via* Ghattal rather than with the upper provinces *via* Ranigunge. The view taken by the Commissioner would appear to be opposed to the ideas of the Road Cess Committees of Bankoora and Midnapore, but there can be very little doubt that the Commissioner is right. The matter is one, however, of some importance and should be investigated. The completion of the railway to Tarkessur, and the contemplated line from Howrah to Amta, will probably influence the action of Road Committees. For some unexplained reason the export of silk from Beerbhoom rose during the year from 2,710 maunds to 6,462 maunds. Much of the silk exported from this district is, however, imported from Moorshedabad. The value of the export trade in potatoes from the Hooghly district is estimated at Rs. 24,19,556. The export trade in country cloth from this district is also much more extensive than in most other districts, being estimated at nearly thirty-one lakhs of rupees. The total exports of the Hooghly district are believed to exceed 134 lakhs of rupees; and the imports, consisting chiefly of piece-goods, rice, ghee, and twist, are put down at nearly 89 lakhs. The figures, however, more indicate than measure the trade.

The following statement shows the quantity and value of the goods which have passed through the Midnapore canals during the last three years:—

			<i>Exports.</i>		
YEAR.				Quantity. Mds.	Value. Rs.
1880-81	28,29,825	71,19,127
1881-82	32,07,069	74,29,964
1882-83	37,17,836	94,99,173
			<i>Imports.</i>		
1880-81	15,06,810	95,09,639
1881-82	14,78,544	94,79,707
1882-83	16,05,419	98,19,821

Rice formed more than half of the exports. The large increase is not explained, but is believed by the Commissioner to be solely due to the

increased facilities of transport and communication offered by the canals. This view is probably correct; and it serves as a further illustration, if any were needed, of the profitable nature of expenditure on carefully selected public works.

9. *State of Public feeling.*—The Commissioner's remarks on this subject, being the opinion of an experienced and observant officer, are reproduced in full:—

Public feeling is confined to a comparatively small class of persons who have been educated at Government schools and colleges, and who have imbibed an interest in politics along with the English language and literature which they studied there.

Of this class there are two branches—the older, wiser, and more far-seeing, who appreciate the benefits conferred on their country by British rule, and the younger, more ambitious, and less experienced, who think themselves fit for the highest power, and have learnt to look upon us as enemies, who are keeping them out of the independence and universal prosperity which they would enjoy if we left the country.

The two subjects that have attracted the attention of this class are the Local Self-Government scheme, and the Criminal Jurisdiction Bill. The former has been much discussed in all the large towns, but has failed to arouse any interest in the minds of the rural population. Generally speaking, this measure, when at first announced, gave rise to the most extravagant anticipations among the educated classes. As time has gone on, and the moderate scope of the proposals has become apparent, the interest in it has very much died out. A partial and guarded admission to a share in the minor branches of the administration, with no pay, much hard work, and very little glory, is not a prospect which has much attractions for the light-headed vapouring youths who aspire to govern Bengal; while the older and wiser men openly say that things are much better managed at present than they are likely to be under the new law, which, consequently, whenever and in whatever shape it may eventually issue, will probably fall very flat, and effect very little real change in the position of affairs.

As regards the Criminal Jurisdiction Bill, all the Collectors of the Division report that it is regarded with great dislike and regret by the majority of the educated natives; but so active a propaganda has been organised in favour of it by emissaries from Calcutta, that the younger and less experienced are carried away by it. They are sedulously taught to regard it as a battle for supremacy between the European and the Bengali, in which, if they only stand firm, they are certain, seeing how strongly the Viceroy and his Council lean to their side, to gain the victory.

Meetings have been got in the chief towns of the Division by emissaries from Calcutta, at which, failing to induce the older and more experienced to attend, they have collected crowds of school-boys. Of these meetings it may be said, as of a certain meeting at Ephesus many centuries ago, that "the more part knew not wherefore they were come together." These meetings are described in the native papers as "crowded and influential." The Collector of Hooghly writes:—"Mr. B. De, the Joint-Magistrate, tells me that since the large meeting at Calcutta there has been a strong feeling raised in favour of the amendment of the Criminal Procedure Bill extending the jurisdiction of Native Magistrates over European British subjects, and that before that meeting there was not much feeling on the matter." I call attention to the words italicised. With so active a propaganda being carried on in such a place as Hooghly, I am not surprised to learn that at a meeting at Chinsurah, attended, the Collector says (and I can confirm this, for I saw them going), chiefly by school-boys, Mr. Justice Norris was burnt in effigy.

From every part of the Division comes painful evidence of the intense mutual aversion raised by this Bill between Europeans and Natives. I could give many illustrations of this, but it is better, perhaps, to say as little as possible. Only high officials have escaped this feeling. Their position guarantees them to a certain extent against molestation; and if I may judge from my own sentiments, they cannot forget the many ties of good service and kindly relations that have united them with courteous and intelligent Bengali gentlemen through many years; nor can they forget that the real leaders of native opinion do not sympathise with the party of agitation. It is to be regretted that they do not speak out and tell the world what is the real opinion of the Bengalis on this subject. Perhaps we can hardly blame them for persisting in their habitual reticence, and we at least are not likely to desert our old friends for that reason; still there is no doubt that a terribly bitter spirit has been aroused, and no man can see what the end may be.

10. *Public Press.*—On this subject the Commissioner makes the following remarks, quoting partially from Mr. Wilson, Collector of Midnapore:—

Among Calcutta papers the *Statesman*, the *Hindu Patriot*, and the *Bengalee* are the favourites. The *Bengalee* has occasionally noticed the affairs of this district, and has once or twice been of use by putting me on the track of something going wrong; but the want of care in testing facts, and the generally exaggerated style in which it is written, greatly interfere with its usefulness in this way. Among the vernacular papers the *Shomeprokash* and the *Bangobashee* are in good circulation, and exercise some influence.

The *Shudharami* and the *Education Gazette* are the only papers published in the town of Hooghly. The Collector reports that they are well written, moderate in tone, and have a fair, though limited, circulation. But in these suburban districts those who read the newspapers at all take in Calcutta papers, some of which are unobjectionable in tone, while others are decidedly the reverse.

At a time of such general excitement as the present, it is perhaps hardly fair to make any remarks as to the attitude of these papers, which must be recognized as entirely exceptional, even the most moderate having been to a great extent carried away by the intensity of popular feeling—an intensity which we must earnestly hope is only temporary.

11. *Statistical Enquiries.*—The Commissioner believes that about one-half of the total number of deaths occurring in the division is now reported to the police, and attributes the reluctance of the people to report deaths to a feeling that the delay and inconvenience caused to families in which deaths supposed to be suspicious occur will be caused in all cases, suspicious or not, in which deaths come to the knowledge of the police, and urges the importance of strictly limiting enquiries to cases in which suspicion exists. The Commissioner's remarks on this head will be communicated to the Inspector-General of Police.

12. *Police and Crime.*—The account given of the condition of the Division in respect of criminal cases is not very full, the Commissioner having no doubt reserved the bulk of his remarks for the Police Report. The facts noticed are, however, satisfactory. The number of cognizable cases fell from 18,077 in 1881 to 16,459 in 1882, and being common to all classes except that of serious offences against property, in which no change took place. In all districts, except Howrah, the number of cases declared false rose; but the result of prosecutions in false cases is described as far from satisfactory. In Burdwan the increase of seven took place in the number of dacoities, believed by the Magistrate to be due to a temporary outbreak of crime, and not to any increase in the number of professional dacoits in the district. A decline is also apparent in the number of non-cognizable cases, and is ascribed to the low prices realised for food-grains, which rendered the provision of money for the prosecution of petty cases a matter of difficulty. The conduct of the police, except in the Burdwan district, is favourably described.

13. *Civil Justice.*—The number of civil suits of every class rose considerably during the year under review; but the amount in dispute, both in suits for money and moveables, and in rent suits, fell considerably. In title and other suits the increase in number was accompanied by a large increase in value, thus:—

	SUITS FOR MONEY AND MOVEABLES.			RENT SUITS.			TITLE AND OTHER SUITS.		
	Number.	Value in dispute.	Average value.	Number.	Value in dispute.	Average value.	Number.	Value in dispute.	Average value.
		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.
1881	21,318	22,14,464	1037	26,098	14,37,870	528	8,615	16,28,000	2458
1882	24,538	19,88,843	810	29,791	13,49,518	452	7,139	46,49,519	6571
	+3,220	-2,25,621	-227	+2,793	-78,352	-76	+824	+29,20,919	+3909

With the exception of a decline in the number of title and other suits instituted in Bankoora, the increase was common to all the districts of the division. In the opinion of the District Officers, the increase in suits for money and moveables, and in rent suits, was due to the low prices of agricultural produce, which rendered the payment of debts and of money rents difficult. The Commissioner is disposed to explain it by the growing popularity of the civil courts, to which people now resort gladly to settle disputes instead of keeping up local feuds. Both causes have probably been at work to a considerable extent. Of the total number of suits settled during the year, which includes those pending from the previous year, 29,590 were withdrawn or compromised, 21,811 were decided *ex parte*, and 13,603 only contested. The number of cases pending at the close of the year was 6,106. The Lieutenant-Governor regrets that the Commissioner should have to complain of the meagreness of the information supplied to him under this head by the Collectors of Hooghly, Midnapore, and Beerbhoom, and the Deputy Collector of Howrah, and trusts that more complete reports may be furnished in future.

14. *Land and Land Revenue.*—The collections of land revenue, which amounted to Rs. 78,09,905, out of a current demand of Rs. 81,62,527, and to Rs. 5,73,523 out of an arrear demand of Rs. 7,09,725, though still falling short of a satisfactory standard, shew a marked improvement over those of the previous year. The balance, as on previous occasions, is mainly due from temporarily-settled

and Government estates in the district of Midnapore. The collections on the large Government estates of Jellamutha and Majnamutha, which last year amounted to only 29·5 per cent. of the demand, have, under the arrangements initiated by Mr. Finucane and carried out by Mr. Slack, risen to 61·1 per cent. of the demand. Considerable remissions have been made, and it is believed by the Commissioner that the balance at the close of the current year will be very small. The balance from the Government estates of the Midnapore district is said to be in course of realization. The work done by the Midnapore surveying party under Baboo Bisweswar Bannerji consisted chiefly of copying maps, &c., and testing measurements. Certain errors have been found in the measurements of two pergunnahs, of which the rectification will, it is feared, take time. The progress made by the Bankoora survey party have not been very satisfactory, a state of things due, in the Commissioner's opinion, to the unmethodical habits of the Deputy Collector in charge. Mr. Beames has, however, taken steps to remedy the irregularities which have come to light. The only district in which a considerable amount of land registration work remains to be done is Midnapore, in which 750 cases are still pending out of those for which applications have been received, and some 1,200 estates are believed to exist, for which no applications have been made.

15. *Excise.*—A further increase of Rs. 71,434, or 7·8 per cent., took place in the excise revenue of the division, which amounted to Rs. 9,79,912. As compared with the average collections of the previous five years, the excise revenue of the year under review shewed an increase of Rs. 1,93,120, or 24·5 per cent. The increase is common to all exciseable articles except rum and charas, and is most remarkable in the case of country spirits, opium, ganja, pachwai, and tari, owing to a more favourable settlement of the spirit shops, the establishment of a more effectual check on opium-smuggling, the increase in the duty on ganja, and a growing taste for pachwai and tari, which—these being the most wholesome liquors consumed—is not to be regretted. The Commissioner does not believe that any real increase in drunkenness has taken place; for though the facilities for obtaining licit liquor are greater than formerly, the class of liquor sold is more wholesome and not very strong. The arrest and conviction of two of the principal opium-smugglers of Chandernagore has put a great stop to smuggling, the effect of which is already perceptible in a considerable rise in the opium revenue of Hooghly, especially in those parts lying near Chandernagore.

16. *Stamps.*—The stamp revenue of the division, which amounted in 1881-82 to Rs. 12,64,407, rose in the year under review to Rs. 13,78,103, the increase being marked in the sales both of judicial and non-judicial stamps. The Commissioner reports that increased attention is now paid both by judicial and revenue officers to the duty of enforcing compliance with the Stamp law and Rules, and that, as a consequence, the number of cases in which duty and penalties were levied during the year shews an increase. In Midnapore some irregularity has taken place in the levy of stamp duty, but the Commissioner has issued orders which will prevent its recurrence.

17. *License Tax.*—A decline from Rs. 1,18,635 to Rs. 1,14,159 took place in the collections on account of license-tax and penalties, owing, it is believed, to the general depression of trade and the failure of several rich merchants of the Hooghly district, coupled with the more accurate knowledge now possessed by license-tax officials of the incomes of assesseees.

18. *Monetary arrangements.*—The table given on the margin shews the transactions of the district Savings Banks in the division for the last three years. The large falling off in the year previous to that under review was due mainly to the change in the rules, which was made with the object of confining the use of the Banks to the poorer class, for whom they were originally intended. The Commissioner and District Officers are not, however, sanguine that the desired result has been obtained. Mr. Beames writes as follows:—

There has been a considerable falling off in deposits during the year as compared with 1880-81, though as compared with 1881-82 there is an increase. This is most probably due to the fact that the establishment of Savings Banks in Post Offices near their homes has

	Deposits.	With- drawals.
	Rs.	Rs.
1880-81	2,02,669	1,86,813
1881-82	1,88,622	1,57,402
1882-83	1,98,354	1,75,043

induced many people to close their transactions with the distant district treasuries. But the extent to which the transactions were carried on during the year is not such as to lead to any anticipation of the eventual success of the system. The principal object of opening these Banks was to provide a safe place of deposit for the savings of the agricultural classes. This they have failed to do, apparently for the reason that the interest obtainable for loans on small sums in the bazar is much higher than that offered by the Savings Banks. The Collector of Midnapore reports that the principal constituents of the Bank in his district are the subordinate officials, by many of whom small sums of money are deposited by way of security for the due performance of their duties. The experience of Mr. Westmacott leads him virtually to the same conclusion. He writes—"An analysis of the accounts would probably shew that most of them are on account of official deposits of security or trust funds, and not really accounts of people who wish to save."

The Post Office Savings Banks have now, I believe, obtained a sound footing, and I think it is time to consider whether the district Savings Banks should not be closed entirely.

No statistics are given of the sales of stock notes elsewhere than in the Howrah district, where Rs. 37,587 worth have been sold. The Deputy Collector and the Commissioner believe that they are unlikely to become popular, and state that at present they are not held to any extent by the agricultural classes. The popularity of the money-order system continues to increase since its management has been transferred to the Post Office. The transactions in currency notes at the Government treasuries shew a large increase.

19. *Railways and other Public Works.*—The management of the East Indian Railway continued satisfactory, and the accidents which occurred were due either to suicide or carelessness. Two cases are mentioned of obstructions being placed on the line, in both of which the offenders were punished. The railway from Seoraphuli to Tarakeswar has been commenced, and that from Burdwan to Cutwa has received the sanction of Government. The Eden Canal is reported to be highly appreciated as a means of supplying good drinking water, and to have effected a notable diminution in fever and cholera. The Midnapore canal remained in good order, and steps are being taken for the drainage of the tract of country between the Hooghly and Rupnarain rivers. The Government steamer service running between Calcutta and Midnapore was taken over during the year by Messrs. Hoare, Miller and Company, and the same firm are now contemplating opening regular steam communication with Ghattal.

20. *Communications*—The total amount expended on district roads during the year was Rs. 2,87,463, of which almost the whole was devoted to the maintenance and repairs of existing roads. The chief new works undertaken were the establishment of a road from Satgachia to Mantaswar in the east central part of the Burdwan district, and the extension of the Bankoora roads to the portions of that district recently transferred from Manbhoom. The Commissioner hopes to see these roads connected shortly with those of Northern Midnapore. The amount spent on planting and maintaining trees along roadsides were satisfactory in all districts except Beerbhoom. The sum of Rs. 46,380, which was expended on village roads throughout the district, was, the Commissioner considers, adequate, though he doubts whether it has been profitably employed in all cases.

21. *Education.*—The number both of schools and pupils shewed a further advance of 768 and 14,291 respectively, there being now 11,166 of the former and 244,775 of the latter in the division. The average number of children at school in each thousand of the population is now 33, against 31.1 in the previous year. The average number of pupils attending each school is now 21 against 22.16 in 1881-82, and 23.69 in 1880-81. Two madrasas were established during the year in Burdwan. In Bankoora the prevalence of malarious fever caused a falling off in the number both of schools and pupils, but certain improvements were introduced in the system of primary education, which will be more properly considered in connection with the general report of the Director of Public Instruction. Attempts have been made in this district to encourage shop-keepers, by the offer of rewards, to teach the elements of knowledge to the children in their villages, and to introduce into pathsalas the elements of music and calisthenics. The latter of these objects is considered by the Commissioner, apparently with reason, to be fanciful and unpractical, and the

Lieutenant-Governor is disposed to think he might include the former under the same description. In Beerbhoom fever has also caused some falling off in the primary schools, but the higher schools are said to be in a satisfactory state. The fifteen Sonthal schools in the district are reported to be doing well. In Hooghly and Midnapore the number of schools has increased, and in the former district the chief guru system is doing good. The Magistrate of Midnapore considers that the present system of payment by results requires change in some of its details, and in this view the Commissioner agrees. His remarks and those of Mr. Wilson will be forwarded to the Director of Public Instruction for consideration. The total number of girls' schools in the division is 95 with 2,704 pupils, besides which a large number of girls are studying in boys' schools. The most advanced district in the division, and probably in all Bengal in respect of female education, is Hooghly, where much instruction is imparted privately.

22. *Committees.*—The Commissioner again notices favourably the efficiency of the municipal and other committees of the division, especially those of the Hooghly and Burdwan districts, which have been stimulated to some extent by the discussions which have taken place about local self-government. Howrah, where the contrary would have been expected, is the only district which is unfavourably mentioned in this respect, the average attendance out of a body of 27 Commissioners being only eleven. Mr. Beames believes that the consultative element is somewhat overshadowed by the executive—a defect which should be remedied as opportunity arises.

23. *Wards' Estates.*—Four small estates in the Midnapore district were brought under the management of the Court of Wards during the year, raising the total number of estates under the management to 17. The collections were unsatisfactory, amounting to only Rs. 7,90,979 or 42·6 per cent., out of a total demand of Rs. 18,54,474. The Maisadul estate in Midnapore, which is the most important in the division, having a net annual income of about two lakhs of rupees, is free from encumbrances and will be released early next year. The eldest ward is consulted in all important matters, and resides on the estate with one of his brothers to learn zemindari affairs. The same system is followed to some extent with the Sultangatcha wards. The remaining wards, with the exception of one, who is a lunatic, are at school. The estates are said to be all well managed.

24. *Conduct of Zemindars.*—With the exception of two disputes between zemindars and their ryots in the Midnapore district, and some trifling disagreements in the Burdwan district, the relations between landlords and tenants in the division appear to be satisfactory. The disputes between Messrs. Watson and their ryots in pergunnah Bogri are at an end. The zemindars most favourably mentioned are Baboos Radha Ballab Roy, Rai Bahadur, and Raghunath Panja of Bankora, the Maharaja of Burdwan, Baboos Lalit Mohan Ray and Chakan Lal Ray of Chakdighi, and the Maharani of Searsole in the Burdwan district.

25. *Character of Officers.*—The Commissioner's remarks on the subject will be considered in the Appointment Department. The Commissioner singles out for special praise Messrs. Wilson and Carstairs, and Baboos Bisweswar Bannerjee, Bankim Chunder Chatterjee, and Bimola Charan Bhattacharjee.

By order of the Lieutenant-Governor of Bengal,

A. P. MACDONNELL,

Offg. Secretary to the Government of Bengal.

RESOLUTION ON THE REPORT ON THE CHARITABLE DISPENSARIES IN BENGAL FOR THE YEAR 1882.

MUNICIPAL DEPARTMENT—MEDICAL.

Darjeeling, the 3rd September 1883.

RESOLUTION.

READ—

The Report on the Charitable Dispensaries in Bengal for the year 1882.

Read again—

The Report for 1881, and the Resolution recorded upon it.

In submitting the report, the Surgeon-General observes that the reforms in the management and constitution of dispensaries in Bengal, which were begun some years back, and which made considerable progress in 1881, were not continued in 1882 in consequence of the important changes foreshadowed by the scheme of Local Self-Government and the Resolution of the Government of Bengal dated the 20th February 1882. Dr. Simpson anticipates that, if the principles which underlie the policy of that scheme are applied in their fulness to the management of the dispensaries of this province, the work of improvement and reformation will receive a serious check; and that the control exercised by Government will be largely withdrawn, and will pass into the hands of inexperienced and irresponsible local bodies. For this reason no attempt was made during the year under review to continue the work of administrative reform. "It was manifestly useless to continue the laborious application of particular measures, however necessary they may have been, when the entire system of dispensary government was about to be changed in a manner that should probably subvert altogether the policy which had been inaugurated." The Lieutenant-Governor does not share the apprehensions that have been expressed by the Surgeon-General as to the future of medical charity in Bengal. There are still many acknowledged defects in the management of these institutions, but it is altogether premature to anticipate that these defects will not be remedied, much more to assert that they are sure to become much graver, because a system of purely State administration is to be abandoned. Dr. Simpson has not fully appreciated the intentions of Government in the matter. It is the desire of the Government of Bengal to allow to the representatives of the people a voice in the settlement of all questions which affect merely local wants and local interests, and which do not involve considerations of general policy. With this object it is proposed to invest Local Government bodies with a certain degree of discretion in administering such funds as may be locally available for expenditure upon medical charity. It is no part of the intention of Government to surrender any powers of supervision and control which the interests of the local public or of the State make it desirable to retain. Ample precautions will be taken to ensure that in administering medical funds, local bodies shall conform to the general policy of the Government; and though the precise measures by which this is to be carried into effect cannot be formulated till the results of legislation are known, it is the Lieutenant-Governor's intention that they shall be such as to provide a substantial guarantee against inefficiency or abuse in the future.

2. The number of dispensaries of all kinds open at the beginning of the year was 231; eight were abolished during the year, leaving 223 in existence at its close. These were classified as follows:—

					1882.	1881.
Class	I	...	...	...	107	81
"	II	...	...	...	111	145
"	III	...	...	...	5	5
Total					223	231

During the year under review, therefore, 26 dispensaries were transferred from Class II to Class I, and were rendered independent of Government aid.

Of the 111 dispensaries, however, still shown under Class II as being partly supported by the State, no less than 70 have, in virtue of the Resolution of the 20th February 1882, been transferred to the charge of the municipalities within which they are situated, and are now supported by funds made available by the assumption by Government of the charges for police. Since the close of the year under review, a new system of classification has been prescribed by the Government of India, which distinguishes clearly between dispensaries which receive aid from General Revenues and those which are supported by municipalities and other Local Government bodies from public money.

3. The following table shows the amount of work done by the dispensaries in Bengal during the last two years:—

	IN-DOOR.										OUT-DOOR.									
	Under 25.	25 to 50.	50 to 75.	75 to 100.	100 to 250.	250 to 500.	500 to 750.	750 to 1,000.	Upwards of 1,000.	Total.	Under 250.	250 to 500.	500 to 750.	750 to 1,000.	1,000 to 2,500.	2,500 to 5,000.	5,000 to 7,500.	7,500 to 10,000.	Upwards of 10,000.	Total.
1882	21	18	8	9	53	20	7	...	2	133	1	1	4	11	78	72	32	10	10	235
Percentage	15.76	14.77	6.41	6.77	40.86	15.04	5.26	...	1.5	100	1.44	1.44	4.78	8.30	51.07	47.22	11.22	4.44	7.11	...
1881	28	19	10	15	46	23	6	1	1	140	1	3	8	10	88	70	27	10	17	236
Percentage	19.79	12.76	6.71	10.07	30.87	15.44	4.03	.67	.67	100	.42	1.27	1.27	4.24	30.44	23.16	11.44	4.24	7.2	...

The Surgeon-General makes the following observations:—"Having regard to the numbers of police cases and pilgrims which these figures include, it cannot be said that the public derives much benefit from the house practice of dispensaries. Few examples, such as the Dacca, Durbhunga, Patna, and Cuttack hospitals, represent nearly all the good that is done to the sick-poor in this respect." The popularity of the European methods of treatment is of slow growth, and develops less rapidly than could be wished. It is at present confined almost exclusively to the educated and semi-educated classes, and has made but little progress among the masses of the people. There was little change in the classes and grades of medical officers in charge of dispensaries during the year. There are now 57 Assistant Surgeons and 157 Civil Hospital Assistants of all ranks so employed, against 60 and 160 in the previous year. The reduction corresponds very nearly with the total reduction in the number of dispensaries during the year. The Surgeon-General notices that attempts were made in several instances by municipalities to retain the service of medical officers of a higher grade than the work required, and he observes that, "if the power of appointment be left to governing bodies, there is little doubt that hereafter the number of Assistant Surgeons in charge of dispensaries will be largely increased, whatever the requirements of the institutions may be." For the present, the Lieutenant-Governor has ordered, in the Municipal Department Circular No. 14T—M, dated 27th October 1882, that all appointments to the charge of municipal dispensaries will be made by the Surgeon-General. The general question of the right of making appointments to dispensaries maintained by local bodies is still under the consideration of Government in connection with the general scheme of Local Self-Government.

4. Some improvement is apparent in the record of inspections performed by Civil Surgeons during the past year. The number of dispensaries which were not visited during the year was only 11; 51 were visited every day or "frequently," and 23 three times, 11 four times, and 7 more than four times during the year. The inspection reports were, on the whole, carefully prepared, and showed close criticism on all points ascertainable in this manner. At the same time the local reports too frequently confirm what has come under the Lieutenant-Governor's personal observation in many places, that the duties of inspection are seldom performed by Sub-Committees or members of the municipalities where dispensaries are under municipal control. The Magistrate and Collector, the Sub-Divisional Officer, and the Civil Surgeon are punctual in the discharge of their duty. Native members of the municipality

ignore it. There can be no doubt, as one Civil Surgeon has pointed out, that the dispensaries in which the supporters take an interest are best appreciated and frequented by the people; and in now bringing the matter forward, the Lieutenant-Governor would wish the Chairmen of all Municipalities to establish a system of weekly or monthly visitings in rotation by those who have accepted the responsibility of supervising these local hospitals.

5. The total number of patients, both in-door and out-door, treated at the charitable dispensaries throughout Bengal during 1882 was—

		1881.		1882.	
		Number.	Patients.	Number.	Patients.
Calcutta	hospitals and dispensaries	6	275,714	6	253,083
Provincial	ditto ditto	236	970,978	225	957,623
Total		242	1,246,692	231	1,210,706

Of these, 23,468 were in-door and 934,155 were out-door patients, the corresponding numbers in 1881 being 23,444 and 947,534. The Surgeon-General considers that the inspecting officers have given much attention to records of attendance, and that some improvement in the trustworthiness of the returns has taken place. This, added to the reduction in the number of dispensaries open during the year, is sufficient to account for the apparent falling off in the numbers of patients treated. The Lieutenant-Governor is not disposed to think that there has been any real diminution in the benefits afforded to the public by the dispensaries of the province. According to recorded figures, the proportion borne by the number of patients treated to total population in each civil division was—

				1881.	1882.
				Percentage.	Percentage.
Burdwan	...	...	...	2.21	2.26
Presidency	...	...	...	1.94	1.89
Rajshahye	...	...	...	1.98	2.05
Orissa	...	...	...	1.33	1.41
Dacca	...	...	...	1.18	1.005
Chittagong	...	...	...	.5	.5
Patna	...	...	...	1.94	1.92
Bhagulpore	...	...	...	.9	.84
Chota Nagpore	...	...	...	.48	.49

The percentage for the entire province was 1.33 against 1.78 in the previous year. These figures show the insignificant proportion of the population resorting to dispensaries.

6. Of the total number of patients treated during the year, 60.39 per cent. were adult males, 16.84 per cent. were adult females, and 22.76 children of both sexes. Out of every 100 patients .08 were Europeans, .29 Eurasians, 31.44 Mahomedans, 66.32 Hindus, and 1.86 Others. These figures do not differ materially from those of previous years. The relative proportions of Hindu and Mahomedan patients accord closely with those of the total populations of those religions as ascertained at the Census of 1881. The mortality among in-patients, as usual, varied enormously in different dispensaries, being 93.15 per cent. at Goulundo and 45.45 per cent. at Ranaghat, against 1.96 at Madaripore and 2.72 at Palamow. The general death-rate was almost the same as in the two preceding years. As was stated in the Resolution recorded last year, no inferences of any value are to be deduced from these figures as to the management or healthiness of any particular institution.

7. The use of cinchona febrifuge continues to make rapid progress, the quantity sold during 1882-83 being 423 lbs. against 323 lbs. in 1881-82 and 163 lbs. in the year before. The Surgeon-General points out that the increase was less marked than in the previous year, in consequence of the diminution in the prevalence of epidemic fever in 1882.

8. The total income and expenditure of the dispensaries of the province during the year are shown in the following table:—

			Rs.	A.	P.
<i>Income.</i>					
Cash balance on 1st January 1882	...	...	64,412	6	8
<i>From Government—</i>					
As salaries	...	...	33,351	0	6
„ registers and forms	...	...	1,219	9	3
„ European medicines	...	...	582	5	1
For diet of police cases	...	...	1,392	15	3
Sale of medicines	...	...	.....
Special allowance from Government	...	...	4,723	4	6
Total	...	...	41,269	2	7
<i>From local or other funds</i>					
„ municipal funds	...	...	49,211	12	5
Interest on investments	...	...	89,189	4	5
Sale of securities or withdrawal of deposits	...	...	29,035	8	2
European subscriptions	...	...	24,127	5	0
Native subscriptions	...	...	18,856	7	4
	...	...	1,18,544	12	0
Total Income	...	...	4,34,646	10	7
<i>Expenditure.</i>					
On establishment	...	...	2,17,396	8	4
„ bazar medicines	...	...	9,437	1	6
„ Europe medicines, whether from Government store or purchased otherwise	...	...	31,128	10	7
„ diet	...	...	30,957	0	4
„ miscellaneous charges	...	...	26,299	12	7
„ buildings and repairs	...	...	27,540	5	0
Invested during the year	...	...	19,758	0	4
Total Expenditure	...	...	3,65,517	6	8
Cash balance on 31st December 1882	...	...	69,129	3	11

A comparison of these figures with those of the previous year illustrates the effect of the orders of Government transferring the charges on account of dispensaries and hospitals to the municipalities within which they are situated. In 1882 the total sum paid by Government in various forms towards the support of dispensaries, including the salaries of medical officers, was Rs. 41,269. In the previous year the sum contributed by Government had been Rs. 1,06,354, so that the new policy has resulted in a reduction of the charge hitherto borne by Government of Rs. 65,115. It is stated also that the charge for special allowances from Government, which amounted to Rs. 4,723, will almost entirely disappear from the accounts of 1883. The total amount of the annual charges which will thus have been thrown upon municipalities will therefore come to a little more than Rs. 70,000. The same Resolution which transferred to municipalities the expenditure incurred on dispensaries, also relieved those bodies of charges on account of police, which aggregate upwards of Rs. 4,40,000 per annum. The effect of the double transfer has, therefore, been to place at the disposal of municipalities a net sum of Rs. 3,70,000 per annum for expenditure on other public objects.

9. The invested capital of the dispensaries of Bengal on the 1st January 1882 amounted to Rs. 8,41,775. A sum of Rs. 19,758 was invested during the year, while securities were sold to the amount of Rs. 38,000, and deposits withdrawn to the extent of Rs. 22,127. The closing balance of the invested capital, therefore, amounted to Rs. 8,01,405. The cash balance, on the other hand, increased from Rs. 64,412 to Rs. 69,129. The payments by Government on account of salaries of medical subordinates fell from Rs. 87,477 in 1881 to Rs. 33,351 in 1882, and the special allowances from Rs. 15,038 to Rs. 4,723.

These reductions were due to the interchange of medical and police charges already referred to. The receipts from local sources, other than municipalities, were Rs. 49,211 against Rs. 45,695 in the previous year; while the receipts from municipalities rose from Rs. 36,152 to Rs. 89,159. The interest on investments amounted to Rs. 29,035, being a reduction of Rs. 4,395 from the receipts of the previous year. This was due to the large amount of securities sold or withdrawn during the year. Among other sums, the endowment of the dispensary at Natuda, which amounted to Rs. 36,000, was refunded to the proprietor on the closure of the institution. The subscriptions from Europeans and Natives amounted to Rs. 18,856 and Rs. 1,18,544 respectively, against Rs. 20,022 and Rs. 1,27,786 in 1881. In some dispensaries it is reported that subscriptions have fallen largely into arrears, and that subscribers have made the transfer of the institutions to municipalities a pretext for refusing to pay. The Lieutenant-Governor hopes that it will not be long before a truer view prevails of the claims of dispensaries under local management, and that the transfer which has been made will ultimately prove, not a drawback, but a stimulus to local liberality.

10. The gross expenditure on dispensaries reported by the Surgeon-General during 1882 was Rs. 3,45,759 against Rs. 3,74,283 in the previous year. The reduction was shared by all items of expenditure, except cost of diet, which shows a small increase. The cost of establishment was reduced by Rs. 23,147, which was chiefly due to the closure of dispensaries, the dismissal of superfluous servants, and the adjustment of salaries of medical officers. Bazar medicines cost Rs. 9,437 against Rs. 9,956, and Europe medicines Rs. 34,128 against Rs. 36,114. Of the 223 dispensaries remaining open at the close of the year, no less than 104 elected to obtain their medicines independently of the Medical Store Department. The cost of diet was Rs. 30,957 against Rs. 29,104, the average cost of each diet varying from 3 annas 6 pias to 6 pias.

11. The report, which is supplemented by a number of abstracts from the Civil Surgeons' reports, showing the details of working of each dispensary, is submitted by Dr. Simpson, who took over charge of the Surgeon-General's office after the close of the year under review. The Department was in charge of Dr. Payne throughout the year.

By order of the Lieutenant-Governor of Bengal,

COLMAN MACAULAY,

Secretary to the Government of Bengal.

EXAMINATION OF CANDIDATES FOR APPOINTMENT IN THE
SUBORDINATE EXECUTIVE SERVICE.

APPOINTMENT DEPARTMENT.

Darjeeling, the 6th September 1883.

RESOLUTION.

READ—

The Resolution of this Government, dated the 23rd February 1883, prescribing the conditions upon which appointments will in future be made to the Subordinate Executive Service in these Provinces.

In paragraph 6 of the Resolution cited above, on the system of the recruitment of the Subordinate Executive Service, it was laid down that, at the examination to be held in January 1884, only those now on the list of candidates for appointments in that Service, and Sub-Deputy Collectors of the first and second grades, would be allowed to appear. It has since been brought to the notice of the Lieutenant-Governor that under this ruling certain Sub-Deputy Collectors (not in either of the two first grades) who had passed the examination for the Native Subordinate Civil Service when Sir George Campbell was Lieutenant-Governor, and who entered the service in the expectation of promotion, would lose all chance of becoming Deputy Collectors. Other persons may, since these examinations ceased to be held, have accepted appointments as Sub-Deputy Collectors under a similar impression. Mr. Rivers Thompson has decided therefore in admitting to the examination in January 1884—

- (1) All Sub-Deputy Collectors of whatever grade, who have passed the Native Civil Service Examination.
- (2) All Sub-Deputy Collectors of whatever grade, who have passed the Entrance Examination of the Calcutta University.

ORDER.—Ordered that a copy of this Resolution be forwarded to all Commissioners of Divisions for information, and for communication to all District Officers in their Divisions.

Ordered also that the Resolution be published in the *Calcutta Gazette*.

By order of the Lieutenant-Governor of Bengal,

F. B. PEACOCK,

Secretary to the Govt. of Bengal.

RESOLUTION ON THE ANNUAL REPORT ON THE ROYAL BOTANICAL GARDENS, CALCUTTA, FOR THE YEAR 1882-83.

FINANCIAL DEPARTMENT, AGRICULTURE.

Darjeeling, the 11th September 1883.

RESOLUTION.

READ—

The annual Report on the Royal Botanic Gardens, Calcutta, for the year 1882-83.

Dr. King has prefixed to his report a sketch of the scheme of improvements in the garden grounds, which was submitted by him for the approval of Government in 1874, and which was finally completed in the past year. He writes:—

"The whole extent of the grounds has been raised in level, the necessary soil having been obtained from large sheets of ornamental water which have been cut out. These artificial lakes have been connected with each other by underground pipes, and a steam pump has been supplied, by which the water in the whole system can be kept at a high level by means of water pumped up from the river. Numerous wide roads have been made—all through the garden—so that carriages may now be driven through every part of it. This is an improvement which is much appreciated, as the old restriction to driving acted to a great extent as a deterrent to visitors. Numerous foot-paths have also been made. The bamboo and that erections, which used to do duty as conservatories, have been replaced by three large, handsome, and efficient structures of iron, on which a thin thatch of grass is spread, and under shelter of which tropical plants thrive admirably. The valuable collection of dried plants has been suitably housed in a handsome building designed by Mr. E. J. Martin, the Government Architect, the internal arrangements of which are to a considerable extent adapted from those of the new Herbarium building at Kew. New propagating houses, tool, and potting-sheds have been erected, and good dwelling-houses have been built for the members of the garden establishment, both European and native. A boundary wall and ditch have been partly built round the garden; and, finally, attempts at landscape effects have been made in the gardens, and the collections have been increased by considerable accessions of plants, both indigenous and exotic."

The change in the whole aspect of the gardens since the scheme was undertaken is scarcely to be understood except by those who have seen them under both conditions. The public of Calcutta, no less than the Government, are indebted to Dr. King for the exertions to which these great improvements are due.

2. Considerable attention was given to the cultivation of various economic plants. The Ceara rubber tree, which thrives well, and has a quick growth, was propagated to a considerable extent, and the Zanzibar rubber plant (*Landolphia*) has, it is said, found a congenial home in Lower Bengal. There has also been a steady demand for mahogany seedlings. Dr. King has been trying to obtain from Europe in large quantity the seed of the paper mulberry (*Broussonetia papyrifera*), which grows wonderfully well, with the view of spreading its cultivation in India. He has also arranged for a supply from Japan of the food-plant known as the "Soy bean" for experimental cultivation in this country, although he entertains serious doubts as to the success of the trial. A few plants of *Cinnamon*, which yields the Cassia bark of commerce, were received from Hong-Kong, but they do not promise to thrive well.

3. The subject of the utilization of various fibrous plants engaged much of the Superintendent's attention in the past year. A French mechanic was, with the consent of the Superintendent, sent out by Monsieur A. Berthet of Rouen, to erect in the garden his patent machine for cleaning Rhea and other fibres. It was driven by the garden-engine and tried on various fibre-yielding plants. It cleaned the Rhea and Agave fibres admirably, though it was not equally successful with plantain and other fibres. The machine is, in Dr. King's words, "beautifully simple," and he has little doubt that if the inventor were to give his mind to the subject, he would have no difficulty in contriving simple and cheap machines adapted to any native fibre suitable as a raw material for paper, cloth, or rope. Should such a machine be successfully constructed, it cannot fail to prove of the utmost value in a country which, like Bengal, abounds with fibrous plants. The Lieutenant-Governor will be glad to receive any further information on the subject which Dr. King may be able to procure. In his present report, Dr. King points out that the *dhatur* used by natives for

rope-making is not the produce of *Eriophorum comosum*, as he had formerly supposed, but is derived from *Andropogon involutus*—a grass said to abound in the hill parts of Behar and Chota Nagpore, where it is known as *sabai*.

4. One of the garden tanks has been stocked with Chinese fish, obtained through the kindness of the Hon'ble H. S. Thomas, of the Madras Civil Service. Dr. King's proposal to make use of the various ornamental lakes in the garden as breeding ground for the fry, which might afterwards be distributed to all parts of the country, commends itself to the approval of the Lieutenant-Governor.

5. The new building for the Herbarium, which was completed during the year under report, is well adapted in every way for its purpose. There have been considerable additions to the collection of dried plants, the chief contributors being Herr Kunstler, Dr. George Watt, Mr. J. S. Gamble, Mr. W. A. Tulbot, Mr. Marshall Woodrow, Dr. Schlich, Dr. Treub, and Dr. Anderson. A considerable number of specimens of dried plants was also obtained through native collectors, whom Dr. King had despatched to the higher Sikkim-Himalaya. The interchange of seeds and plants went on actively during the year, the issues being 29,483 of living plants and 5,224 of seeds, against 23,939 and 3,303, respectively in the previous year. The plants and seeds were chiefly issued to Magistrates for planting in stations and along district roads; to Superintendents of Jails, Hospitals, and educational institutions, and to municipalities. The receipts numbered 9,796 living plants and 883 packets of seed, against 9,766 and 883 in 1881-82, the principal contributors being Sir J. D. Hooker, the Directors of the Botanic Gardens in Ceylon, Demerara, Jamaica, Hong-Kong, Natal, and Singapore, Mr. Kunstler, and Mr. Man. The whole of the budget allotment of Rs. 70,350 was spent, while the receipts from the sale of surplus plants amounted to Rs. 1,494-10-6.

6. The *Lloyd Botanical Garden, Darjeeling*, continued to suffer severely from the depredations of cockchaffer grubs. "This grub," Dr. King writes, "feeds on the fine rootlets by which plants absorb their nourishment from the soil, and only such plants escape as send their rootlets deeper into the soil than it cares to penetrate. The whole of the grass in the garden and all herbaceous plants rapidly succumbed to its ravages, as did many of the flowering shrubs, only the deeper rooting shrubs and trees being spared. Even the plants in the conservatories did not altogether escape; eggs of the insect having got in considerable numbers into the soil of the pots. This grub is not new to the district. It is often found in soil near the sites of old grazing stations in the forest, and it not unfrequently does damage to native crops in the neighbourhood of these. The cockchaffer, of which it is the grub, appears thus to affect manure." By vigorous efforts Mr. Jaffrey, the Curator of the garden, succeeded in collecting and destroying some six millions of the grubs, and the plague has since shown signs of disappearing. The garden also suffered owing to alterations on the top of the hill which were necessary for the preparation of the site for the Eden Sanitarium. Heaps of loose debris were shot over the side of the hill from the hospital side, but steps are being taken to prevent further slips. Dr. King gives Mr. Jaffrey well-deserved credit for the energy and determination which he has displayed under disheartening circumstances. It is believed that the quality of potatoes in the district has improved to some extent by the distribution of acclimatized English potatoes produced in the garden. The whole of the budget allotment of Rs. 8,830 was spent, while the receipts amounted to Rs. 355-4-3.

7. The thanks of the Lieutenant-Governor are again due to Dr. King and his subordinates for the excellent work done during the year.

ORDER—Ordered that a copy of the Report and of the Resolution be submitted to the Government of India, in the Revenue and Agricultural Department, for information.

Ordered also that a copy of the Resolution be forwarded to the Superintendent of the Botanical Gardens for information.

By order of the Lieutenant-Governor of Bengal,

COLMAN MACAULAY,

Secretary to the Government of Bengal.

**REPORT ON THE WORKING OF THE SCHEME FOR THE RECLAMATION
OF THE MUGHYA DOMES IN THE CHUMPARUN DISTRICT.**

No. 2238J—D, dated Darjeeling, the 4th September 1883.

From—F. B. PEACOCK, Esq., Secretary to the Government of Bengal, Judicial,
Political and Appointment Departments,
To—The Commissioner of the Patna Division.

I AM directed to acknowledge the receipt of your letter No. 511G, dated the 9th July last, submitting with your remarks a copy of a report from Mr. Henry, Magistrate of Chumparun, on the working of the scheme sanctioned by Government in August 1882 for the reclamation of the Mughya Domes.

2. In reply, I am to say that the subject is one in which the Lieutenant-Governor takes the greatest interest. It appears that two settlements of these Domes have been formed—one at Burgaon, and the other at Futtehpore—in the Chumparun district. At the former place there are about 250 Domes, and at the latter 90. The Domes have been divided into several work-gangs, each under an overseer of their own clan, who takes the men out to work in the fields, and is responsible for their conduct. Land to the extent of 50 acres has been secured for the settlements and allotted to the various gangs, the headman of each being responsible that the necessary cultivation work is attended to. The crop is considered the property of the gang collectively, and, when reaped, is divided amongst the members. Fifty-five houses on a standard plan have been built for the Domes. Bullocks, farm-stock, ploughs and agricultural implements have been purchased, and a reserve of food-grain kept. The Domes so far have shown that they thoroughly appreciate the efforts made on their behalf; the inhabitants of the adjacent villages are pleased with the settlement of the colony, and interested in the success of the measure; crime has decreased, and property is quite secure. Some of the Domes, picked men, have been appointed chowkidars; others are employed under the Road Cess Department, and others again have obtained employment under neighbouring zemindars. The accounts received of the orderly and industrious habits of all these Domes are satisfactory. Altogether the scheme has so far proved a complete success, and the result is due, in the first place, to the efforts of Mr. Henry himself, and in the next, to the co-operation and assistance of Mr. Cameron, the Sub-Divisional Officer of Bettiah, Mr. Showers, the District Superintendent of Police, Baboo Nokhey Lall Misser, the Inspector of Bettiah, and the three head-constables named. Its success also has in no slight degree been promoted by the aid given by the zemindars and other gentlemen noticed in Mr. Henry's report.

3. The Lieutenant-Governor considers that all these officers and gentlemen deserve great credit for so satisfactory a commencement of a scheme which, if it fulfil its promise, will be a most beneficial work. There are now at the settlements nearly 350 members of a tribe which has hitherto been a cause of difficulty and anxiety to the officers of Government, and of much injury and annoyance to the people in whose vicinity they took up their temporary abode. These persons have not only been reclaimed from predatory habits, but have had provided for them the means of gaining an honest living; and the success of the experiment encourages the hope that the whole tribe of Mughya Domes, scattered throughout the country, may eventually be withdrawn from a life of crime and brought under civilizing influences. The Lieutenant-Governor is, however, of opinion that the Chumparun settlements should not exceed 500 in number. If more Domes have to be provided for, it will be for you to report what steps you would propose to take for a second similar experiment at Chupra or elsewhere in the Patna Division. It is better, however, that the site for a new settlement should be selected on waste lands, and not in very populous tracts.

4. The Lieutenant-Governor need not impress upon you, and the officers interested in the working of the scheme, that the measure should be self-supporting. The end will be worse than the beginning if these Domes begin to think that they can live at Government expense, and refrain from robbery only so long as this privilege is continued to them. When the full number at the settlement is reached, and the means are supplied for gaining an honest livelihood, the grants-in-aid should be yearly reduced, till they can be withdrawn altogether. Meanwhile, however, as the funds are exhausted, the

Lieutenant-Governor sanctions the application of the District Magistrate for a capitation grant of Rs. 3 per head, or a sum of Rs. 1,050 in all, for the current year. The money will be well spent if the arrangements now in hand are fully established.

5. The services of the district officers have already been referred to. Mr. Rivers Thompson requests that you will be so good as to convey to Mr. Henry his special thanks for the great tact and energy he has displayed in introducing and developing this important work; and to Messrs. Cameron and Showers for the assistance rendered by them throughout to the Magistrate of the district. The services of Baboo Nokhey Lall Misser, the Inspector of Police, and of the three head-constables, Ramdhani Singh, Lalji Sahay and Ambica Pershad, will be brought to the notice of the Inspector-General of Police. The acknowledgments of Government are due to the landed proprietors and gentlemen named by Mr. Henry for their liberal grants of land and general co-operation in furtherance of the project.

6. I am to request that a further report of progress may be submitted for the information of Government at the end of the current year.

7. This correspondence will be published in the *Calcutta Gazette*.

No. 2242J—D.

COPY of the correspondence forwarded to the Inspector-General of Police, for information, in continuation of the letter from this office, No. 2356RT—J, dated the 26th August 1882.

No. 2243J—D.

COPY of the correspondence forwarded for the information of the Government of the North-Western Provinces and Oudh.

No. 11583, dated Fort William, the 7th August 1882.

From—D. R. LYALL, Esq., Officiating Inspector-General of Police, L.P.,
To—The Secretary to the Government of Bengal, Judicial Department.

I HAVE the honour to submit herewith a copy of a letter No. 589, dated the 11th ultimo, from the District Superintendent of Police, Chumparun, on the subject of checking the thieving propensities of the Domes, and beg to state that the experiment is well worth a trial, and that it appears to me that the officers concerned will merit the approbation of Government if they succeed.

2. I strongly support Mr. Shower's application for a grant of Rs. 500, and solicit that sanction may be speedily given. Meanwhile, I have in anticipation of sanction authorised him to incur any expenditure which he finds absolutely necessary.

3. It is clearly necessary to give these Domes some help at first, and it is cheaper to do so than to send them to jail.

Copy of a letter from the District Superintendent of Police, Chumparun, to the Personal Assistant to the Inspector-General of Police, Lower Provinces, No. 589, dated 11th July 1882.

THE method of dealing with the Mughya Domes has long been a subject of anxious consideration. Various means have from time to time been suggested for their efficient supervision with a view to checking their thieving propensities, and but little success has attended any of them.

The Domes remain inhabitants of the jungle; they are never seen except when engaged in some criminal act, and for some time past their presence in any habited region has been invariably followed by a hue-and-cry, a pursuit, and sometimes the capture and ill-treatment of the flying man.

No supervision over these men has been possible owing to their having no fixed residence; the jungles are their only shelter, and they possess no impediments to an immediate change of residence. Their want of fixed residence is the principal reason why an efficient surveillance cannot be maintained, and I think that, if the Domes can be induced to settle, a great deal of the difficulty that has been experienced will have been overcome. It must be apparent to every one that no check can be exercised over the movements of the Domes as long as they live hidden away in unknown places. Sometimes in Nepal, sometimes in Goruckpore, and sometimes in this and adjoining districts; and the evil character which is universally attributed to them by the villagers in all parts render it impossible for them to obtain their livelihood except by theft: under present circumstances they cannot be anything but thieves.

In April last the Inspector of Bettiah reported that he had come across a gang of Dome women in the Magaha station jurisdiction of this district. These women, whose husbands were in jail, complained that they were hunted about from one village to another, and were unable to find any encamping ground. An opportunity thus offered itself for finding these persons a place of abode. Through the services of these women the Inspector

succeeded in procuring, after a great deal of hesitation, a meeting with one of the chief Domes in the neighbourhood, Atithwa by name, in some jungle to the north-west of Bagaha police-station. The Inspector so well managed the negotiations that Atithwa's hesitation and fear were overcome, and he agreed to collect the Domes—men, women, and children—who in any way acknowledged him as chief and to live in any place that might be selected.

A site has since been selected near the Burgaon village, three or four miles distant from Bagaha station. The acquiescence of the owner of Burgaon has been secured, and the appointment of Atithwa as one of the chowkidars of Burgaon has been sanctioned. The last step has given the Domes great confidence, and even when some evilly-disposed persons succeeded in frightening away some of the males congregated, by telling them that they were being collected simply to be sent across the seas, Atithwa's influence did not fail in making them return to Burgaon.

At the present time 27 males, 68 females, and 57 children are living in Burgaon. Several huts have, with the assistance of the zemindars of the place, been erected.

I may say that all these steps have been taken with the most cordial sanction and assistance of the Magistrate.

I have lately twice visited Burgaon and seen the Domes: I also saw the zemindars. These latter have agreed to give some land to the Domes and to cultivate with rice some few beegahs for their subsistence. The Joint-Magistrate of Bettiah has also seen and conversed with the Domes at Burgaon, and they have been made to believe that it is entirely for their benefit that trouble is being taken, and that they will be allowed to remain unmolested as long as they live honestly, and that they will most assuredly be hunted and worried as they have been for years should they take to their former habits again.

The Domes have been living in Burgaon for over a month, and they say they have an earnest desire to live peaceably and honestly. So far things have been successful. These Domes, who for years have not been openly seen, except when caught in some act of theft, are living unmolested and in public without fear of themselves and without causing fear to others. Whether the scheme will prove ultimately successful remains to be seen. I myself have but little hope of its success unless the people can be induced to take to agriculture, so that they may have some interest in remaining quiet and become possessed of valuables that they cannot carry away.

Of agriculture they are entirely ignorant; they have not the means of procuring cattle or agricultural implements, and for the present they have no better mode of obtaining their living than mat and basket-making, which at best provide but an uncertain and scanty means of subsistence.

I would beg the Inspector-General's consideration of this scheme. If he is pleased to agree with the Magistrate, the Sub-Divisional Officer of Bettiah, and myself, that a fair and a good trial should be given to the proposed means of bringing these dreaded thieves under control, some assistance is required to provide a sufficiency of food for the Domes now residing in Burgaon, and to supply them with pigs, agricultural implements, and such like, with a view of furnishing them with an inducement to remain. I think Rs 500 would be sufficient for all present wants, most probably till the produce of the land cultivated by the zemindaries is gathered and available for good food, and to give them a start for next year's crop.

Besides Atithwa Dome, three other leading Domes have also been selected for appointment as chowkidars in villages where they can be well watched. It is necessary to the success of the experiment that they should be appointed chowkidars, for it gives them an object in remaining quietly in one place. I am fully aware that it is not well to make these men chowkidars in any number, and in places where they cannot be watched or restrained.

There are two Domes and some 10 or 12 women, the wives of persons in jail, now in Bettiah, who also wish to live in some selected spot. A spot has been selected near the Jagaputty outpost, but nothing further has been done. Without some assistance I have no hope of being able to keep these people together.

No. 2356RT—J, dated Yacht *Rhotas*, the 26th August 1882.

From—F. B. PEACOCK, Esq., Offg. Secretary to the Government of Bengal, Judicial, Political, and Appointment Departments,

To—The Inspector-General of Police.

I AM directed to acknowledge the receipt of your letter No. 11543, dated the 7th instant, submitting a copy of a report from the District Superintendent of Police, Chumparun, on the subject of an attempt which is being made to reclaim the Mughya Domes.

2. It appears that a number of these persons has been induced to settle down near the Burgaon village in the Bettiah sub-division; huts have been erected for them with the assistance of the zemindars of the place, who have also agreed to give some land to the Domes and to cultivate a few bigahs with rice for their subsistence. The chief of the party has been appointed chowkidar, and three other leading men have been selected for similar appointments. The Domes, it seems, have expressed a desire to live honestly and peaceably, and the district officers and you are of opinion that the scheme is well worth a trial. Some assistance, however, is required to provide the Domes with food for the present, to supply them with agricultural implements, pigs, &c., and for this purpose a grant of Rs. 500 is applied for.

3. The Lieutenant-Governor has read the papers with interest, and is of opinion that the arrangements now proposed are much more likely to succeed in reclaiming these Mughya Domes than any system of deportation or imprisonment. The scheme should be allowed a

rial; and in order to allow of this being done, Mr. Rivers Thompson sanctions the grant of Rs. 500 applied for: the amount will be met from general savings in the Police Budget for the current financial year.

4 The Lieutenant-Governor also approves of the employment of the headmen of the Domes as chowkidars within reasonable limitations. Great care should be exercised in choosing the villages for which any of these men is to be appointed chowkidar. The effect of the appointment on the crime of the village should be carefully noted; and the men should only be appointed in places where they can be watched, and where the inhabitants do not object to their employment in this way. If they do object, no attempt should be made to force the Domes upon them. It will, Mr. Rivers Thompson considers, be all the better if the headmen of the Domes are made responsible for the good conduct of the tribe, who should be made to learn the lesson of working for their livelihood and of not depending always upon Government for assistance, as this of course cannot be continued indefinitely.

5 I am to say further that the scheme, a trial of which is now sanctioned, should be worked patiently and watchfully, and a special report upon the subject should be submitted to Government after the expiry of six months.

6. In conclusion, I am to add that the Inspector of Bettiah is entitled to credit for the tact he has displayed in bringing about the present arrangement with the Domes.

No. 2357RT—J.

Copy of the correspondence forwarded to the Commissioner of Patna for information, in continuation of Government order No. 3771J, dated the 12th September 1881.

No. 511G, dated Bankipore, the 9th July 1883.

From—F. M. HALLIDAY, Esq., Commissioner of the Patna Division,

To—The Secretary to the Government of Bengal, Judicial Department.

ADVERTING to your memorandum No. 2357RT—J, dated 26th August 1882, forwarding to me a copy of your No. 2356RT—J, dated 26th August 1882, to the address of the Inspector-General of Police, on the subject of the attempt made in Chumparun to reclaim the Mughya Domes, I have the honour to submit now the accompanying copy of a very interesting report by Mr. Henry, the Magistrate of Chumparun, on the further progress made in the scheme, and the success which has attended the efforts of the local officers in establishing a settlement for this tribe.

2 I beg to support Mr. Henry's application for further funds in connection with the necessary enlarging of these settlements, and I would solicit the sanction of Government to a capitation grant of Rs. 3 per head for the year 1883. This would place a sum of Rs. 1,050 at our disposal, and arrangements could then be made for enlarging the area of arable land attached to the two settlements in Chumparun, and for building more houses.

3. I think it justifiable to make such application, for, as Mr. Henry points out in his report, a sum from the public revenue may with fairness be contributed towards this scheme, for most of these new settlers would, under other conditions, necessarily have found their way into jail, there to be maintained at the public cost.

4. I would draw the attention of His Honor the Lieutenant-Governor to the names of the zemindars so favourably mentioned by Mr. Henry, as having from the first interested themselves in the promotion of the scheme, and having substantially aided in the establishment of the settlements; and I would submit that some recognition might properly be made in the Government Gazette of their liberality and public spirit in this matter.

5. The Sub Divisional Officer of Bettiah, Mr. Cameron, has been conspicuous in the assistance he has given to Mr. Henry in this project, and Mr. Showers, the District Superintendent of Police, has also been most active in his support.

Special credit is due to the Inspector of Police, Baboo Nokhey Lal Misser, and to the head-constables, Ramdhani Singh, Lalji Sahay, and Ambica Pershad.

6. The present success of the undertaking is mainly due to the patient and watchful care with which it has been worked by Mr. Henry himself, and the energy and interest with which he has to my knowledge personally supervised all the arrangements.

No. 895, dated Motihari, the 21st June 1883.

From—E. R. HENRY, Esq., Officiating Magistrate of Chumparun,

To—The Commissioner of the Patna Division.

I HAVE the honour to submit the following report on the settlement of Domes in this district called for in Bengal Government No. 2356RT—J, dated 26th August last.

2. In the end of April last year a gang of Mughya Dome women, whose husbands were in jail, represented to the Bagaha Police that they were being hunted from village to village and were unable to secure either employment or even any resting place owing to the extreme dread and dislike which all the villagers entertained against them.

3. The Bettiah Inspector of Police saw these women, and profiting by the experience gained from previous occasions when attempts were made to settle people of this tribe, very prudently made arrangements which enabled him to have a meeting with the acknowledged leader of these Mughya Domes, a man by name Atithwa. After some hesitation Atithwa, who stated that his tribesmen were worn out by the never-ending crusade which the police waged against them, agreed to bring together a number of the men and women over whom he exercised authority, and to settle them in any locality that might be allotted to him.

A site near a village named Burgaon, within four miles of the Bagaha thana, was selected, and to this place Atithwa, with the two men and some dozen women whom he had got together, were taken. Rough huts were given them, and with the co-operation of the Burgaon zemindars, work was found for them in the fields. After a short time other Domes joined them; by the end of June the number settled had increased to 132, and by the end of October to 147. The number has since greatly increased, and is now about 250 persons. Another settlement was also made at a village named Futtehpore, within a short distance of the Jagaputty police-station. At first 11 Domes were settled, but this number has since increased to about 90.

4. At the present time there are about 350 persons in the two settlements of Burgaon and Futtehpore. The following details, which I abbreviate as much as possible, will explain the system upon which the settlements are administered.

5. From the first the Mughya Domes have been made to understand that the position taken up by the authorities is not that of favouring them (unduly with the object of inducing them to abstain from theft and crime generally, but that of removing to some extent the disabilities under which, with regard to the rest of the people, they have hitherto laboured in the struggle for life. Until these settlements were made, the Domes were looked upon by the police, and, indeed, by the villagers generally, as a species of *feræ naturæ*, whom it was the duty of all well-behaved people to drive away from their neighbourhood. A police officer who allowed Domes to live within his jurisdiction was liable to severe censure; and gradually it became an understood rule for the guidance of the police that Mughya Domes were to be induced by such means as proved most efficacious to remove themselves from within the boundaries of this district. Wherever seen they were hunted down; they were liable to be arrested on the charge of having been concerned in any theft that had occurred within twenty miles; and their very existence in the district was in itself proof positive that the police had been lax in not having sent them up for trial under the bad livelihood sections of the Criminal Procedure Code—for were they not by repute professional robbers and thieves?

6. Numbers of them were imprisoned, and, finally, the tribe consisted almost solely of females, whose husbands were serving out shorter or longer sentences in the various jails of the province. When released from prison the Domes came out to find that the law under which they had lived before they went into jail had not been removed, and that they were practically proscribed felons, against whom all men's hands were raised, and that if they wished to live they would have to rob and steal, since employment was denied to them.

7. The main object, I may say the sole object, kept in view in making and maintaining these settlements has been to afford a resting place to the Mughya Domes, and to provide them with employment, and thereby enable them to live honestly on the proceeds of their own earnings. From the first they have learnt that our assistance goes no further than this, and that those among them who decline to work will have to starve in the settlement or take themselves back to the jungles and be again liable to those harassments which had hitherto made life of so little account to them. With this object always kept prominently in view for the purposes of internal administration, they have been divided into work-gangs under the leadership of particular Domes, who exercise influence over the persons composing the gang; who are responsible for their conduct; take them out to work in the fields; bring them back; and are, in fact, the units with which we deal. These gangs vary in strength according to the position and influence of their leaders. In Burgaon there are ten work-gangs, the numbers comprising which range from 57, in the gang of which Atithwa is leader, to 6 in the smallest gang. This arrangement is one which the Domes themselves approve, and as it constitutes a system of internal and self-working police, which has answered extremely well, care has been taken not to interfere unnecessarily with it.

8. Up to the present time no difficulty has been experienced in providing the Domes with field labour; though not skilful or able to show any large outturn of work, they are submissive and willing, and their labour is now in request.

9. It might have been possible to maintain the settlement for a time on this basis as a colony of day-labourers, but such an attempt would in all probability have in the end resulted in failure. For the last few years there has been a steady demand for labour, the agricultural population having in reserve the means of paying for it; but in years of deficient harvests, when the people have barely enough for their own requirements, the landless labourer may have to travel far in search of employment.

10. Such a condition of affairs would prove ruinous to the prospects of a Dome settlement having to depend for employment, and, consequently, for their livelihood, solely upon a local labour-market liable to serious depressions. In order to meet this difficulty, arrangements are being made which will gradually alter the status of the settlement from that of being a colony of landless day-labourers into a self-contained agricultural community.

11. Both at Burgaon and Futtehpore, owing principally to the cordial co-operation of Mr. Gibbon, C. I. R., land has been secured for the settlement—at Burgaon about 35 acres, and at Futtehpore about 15 acres. This will be as large an area as can be conveniently taken up this year. In the beginning we were somewhat exercised as to the disposition to be made of this land. The first suggestion was that it should be treated as the property of the "commune," to be cultivated by all the Domes equally, and the produce divided amongst the different houses according to the numbers of their inmates; but finally it has been decided to still keep up the work-gang as the unit. The land has been allotted

to the various gangs according to their strength. The gangman is responsible that all necessary cultivation work is carried out, and that the seed is sown at the right time; and when the crop is ripe it will be the property of the work-gang collectively, and will be divided amongst the members according to such arrangement as may be come to.

If the season proves at all favourable the produce from this land ought to prove sufficient to fully supplement the earnings from daily labour of these Dome settlers, and afford them over and above a residue from which to purchase clothes and such other luxuries and necessities as they require. Already some of the settlers have managed to save sufficient money to enable them to add to their stock of poultry and goats, and one or two of their headmen have on their own account rented small patches of land from neighbouring zemindars. This is a most satisfactory proof that they look upon the present state of things as likely to last; while at the same time it is an indication that they are capable of exercising both discretion and forethought in disposing of their available resources.

12. Seven time-expired convicts have joined the settlement with their families. One of these men had learnt bamboo-work in jail, and while at the settlement he made some chairs, moras, &c. which found a ready sale in the local markets. An arrangement has been come to by which he is compelled to spend his mornings in teaching cane-work to all the unemployed boys and girls in the settlement in return for a small monthly salary.

13. Gradually, as their sentences expire, the men whose families are now in this district may be expected to join the settlements, and the only practical difficulty likely to present itself is that of providing labour. I have had some correspondence with the Inspector-General of Jails on the subject. Dr. Lethbridge, who has done everything in his power to promote the success of this experiment, has issued instructions on all Jail Superintendents to send me lists of the Mughya Domes serving in their jails. These lists have been carefully examined here, and the names of all those who may be expected to join the settlements have been noted, and they will now be taught in jail some special handi-rafts—such as durree-weaving, bamboo-work, carpentry—so that when they are released they may be able to maintain themselves even if there is no land to give them. The importance of this may be gathered from the fact that there are at present over 120 male Mughya Domes in the Buxar Central Jail alone, most of whom will be at large again within the next few years.

14. The Domes rear pigs and poultry. Some of the stock was supplied to them from the funds placed at our disposal by Government, but now they are beginning to purchase on their own account from their savings.

15. *House accommodation.*—Excellent sites have been secured both at Burgaon and Futtehpore for the settlements, the ground plans of which have been carefully laid out.

16. The houses are of a standard plan, and placed in three rows facing each other at a distance of 100 feet. The lines of houses run north and south; so that, in the event of fire, the prevailing wind, which during the dry months is westerly, cannot prove a source of danger to the other houses. The houses are of well-built mud-walls, and have excellent thatched roofs, the materials of which were supplied free of cost by neighbouring zemindars. Arrangements are being made for digging two good wells, and the settlements present the appearance of being the best laid-out homesteads in the district. The Domes are much pleased with their new houses; and the fact that they have been built with an appearance of solidity is to them a satisfactory indication that, so long as they behave themselves, the protection they now receive will not be withdrawn from them.

Altogether 55 houses of the standard plan have been constructed. More are required, but cannot be built this year, as there are no funds available. Some of the old grass huts are still standing, and must serve as accommodation for those to whom the new houses have not been allotted. Next year we hope to be able to run up some more houses.

17. A ditch is being dug round the Burgaon homestead land, the spoil bank of which will be planted with bamboos, the arrangement being that a clump is to be allotted to each house. These bamboos will be required for the yearly repairs of the roofs.

18. *Internal description.*—As I have before noted, the headmen are held generally responsible for the good conduct of the men of their gangs when they are at field work at a distance from the settlement. Those headmen constitute the sole check exercised during the daytime; and up to the present time there has not been one complaint from the villagers of the neighbourhood where the gangs go to work.

Atithwa, who is the head of the caste as well as the head of the tribe, draws pay as a chowkidar and assists a constable to take the roll-call of the Domes every night. All the settlers are required to be back within bounds by a certain time, and during the night the constable and chowkidar go from house to house to ascertain that all the men are present. On one occasion—and one only—three men absented themselves: the action taken then has produced an excellent effect, and no more trouble has since been experienced in this respect. In the settlement both men and women are well behaved, and drunkenness is unknown. Any disputes they have are settled amongst themselves according to caste customs; and the great influence which their headmen exercise, and which is now enlisted on the side of order and good conduct, has proved of immense assistance in maintaining discipline.

19. *Attitude of the people and effect on crime.*—At first it was thought that neighbouring villagers would view with distrust the settlement near their homes of men who were admittedly skillful thieves and had been trained up to depend for their livelihood upon their success in crime. But the feeling which at first existed has now been entirely overcome, and no

persons are more interested in the success of the experiment or better satisfied with the results attained than the people of the north-western part of the district, who were formerly so much harassed by these Domes. This is more especially the case in the Tharwat, a large tract of country inhabited by the people of semi-aboriginal descent, who, though industrious and money-making, were unable to guard themselves against the depredations of these skilful thieves. The agent of the zemindar, who owns nearly the whole of this tract, expressed himself so well pleased with the greater security to property that has been brought about, that he offered on behalf of his principal to contribute a sum monthly towards the expenses of the settlement; but his proffered aid was declined on the ground that, if the settlement is to be a success, it must be so worked as to become self-supporting. At the time when bamboos, thatching-grass, and at first when some grain for the food of the settlers was required, all the zemindars of the neighbourhood cheerfully contributed what they could spare, and all the persons having a knowledge of the circumstances of the people in the neighbourhood of the settlement whom I have consulted assure me that they are prepared, in view of the good done, to assist to the full extent of their ability to keep the settlements up. At first I had a suspicion that their aid was offered more from a view of falling in with the wishes of the promoters of the scheme than from any real belief in its utility; but I have since satisfied myself that this is not the case, and that they take an interest in its success, because, so long as it is maintained under existing conditions, the people generally live in greater security. There can be no doubt that since the settlement has been started crime has greatly decreased in that tract of country, and both the people and the administration are gainers in consequence. Formerly no one in villages within a certain radius of the Mudunpore jungles, and other places where the Domes habitually resided, could venture to leave unwatched the smallest articles of property: thallees, lotas, clothes, goats, &c., were spirited away, and at night raids were made into the houses, and ornaments and other property forcibly carried off. This state of lawlessness has entirely ceased, and property is now as secure in those tracts as in the best ordered parts of the district.

20. *Effect on the Police.*—Domes had acquired such an evil reputation that every theft which the police through inability or negligence were unable to trace out was attributed to them. There was an invariable formula for all police criminal cases, which was supposed to fully exonerate the investigating officers from the charge of not having successfully dealt with them. A reference to those records shows that the use of this formula *Mughya Dome lagon ka kam beshak hoga* was supposed to fully account for the fact that the case had been properly returned in criminal form.

21. Mr. Showers, the present District Superintendent, had done a good deal to put a stop to this abuse; but full success was not achieved until the Domes were settled. Police officers now know that they must give some better explanation of their inability to trace out a case, and there can be no doubt that in consequence they are compelled to be more thorough in their work and are less likely to be taken off on wrong scents.

Since the Domes have been settled the police have been able to obtain through them information regarding receivers of stolen property, and some cases have in consequence been successfully prosecuted. This had done good both directly and indirectly—directly in bringing to justice men who for years had lived with impunity upon the losses inflicted on their neighbours, and indirectly by causing such apprehension amongst those receivers still at large that even if these settlements were to break up, they would be cautious in reverting to old practices which they have now discovered to be fraught with danger of a kind hitherto little feared by them.

22. The Domes from the first have, by their conduct, evinced their thorough and cordial appreciation of the benefits conferred upon them. With a view of giving them more remunerative employment, and of encouraging them, three picked men were appointed village chowkidars, and favourable accounts of their diligence and good conduct have been received from the villagers. These appointments were made with some hesitation, but up to the present time the men selected have justified the confidence placed in them.

A few are employed under the road-cess in looking after trees, and the District Engineer finds them well-behaved and willing to work. As an indication of the better repute into which Domes have of late grown, I may mention that ten of them are at present in the private employment of zemindars, European and native, at fixed wages of Rs. 3 monthly. The men sent out for this service were all carefully selected, and the reports we have received from their employers regarding them are quite satisfactory. The experiment of allowing men of such antecedents to be withdrawn from the direct supervision exercised over them at the settlement, and employed at places where opportunities for reverting to old practices might present themselves, appeared one of doubtful prudence.

23. The good conduct of those on whom confidence had been placed, and the fact that the men sent out would leave their wives, children, and such property as they possessed behind them at the settlement, decided us in favour of the attempt; and up to the present time there is no reason to think that it has not proved successful.

For many years past the existence of these Domes proved the greatest difficulty of police administration in this district. In 1877 the Nepalese Government decided to take organised measures against this tribe, with a view of driving them out of Nepal; and in consequence a special police force had to be entertained in this district, as it was feared that if all Domes were expelled from Nepal, they would assemble in such numbers as to be a source of danger and anxiety.

The opportunity was taken of recommending to Government that this tribe should be brought under the operation of the Criminal Tribes Act, or, as an alternative, that steps should be taken to confine them within the four walls of a reformatory. These proposals, which involved heavy expenditure, did not commend themselves to Government, and from that time the Domes were kept in such check as the strength of the police force of the district admitted.

24. The annual crime reports of successive years—particularly the reports for 1877 and 1878—describe vividly the state of lawlessness which these Domes had brought about, and the inability of the administration to deal adequately with them.

In October 1880 a special report was submitted to you, giving the particulars of what is known as the Akta case, which resulted in the conviction of 60 Domes at one trial. I need not enter into details, which are already on record in your office; but this case gives an idea of the extreme boldness of these Domes when assembled together in numbers.

25. From 1880 to June 1882 the depredations of the Domes were on a less extensive scale, but they still caused extreme annoyance and injury to the people inhabiting whole tracts of country, and the problem of dealing with them was still unsolved.

26. The success already achieved by the Chumparun settlements warrants the belief that it is possible to reclaim these people without recourse to the stringent measures which have from time to time been advocated. There appears to be no reason why, in the course of a few years, Mughya Domes should not become industrious and law-abiding members of the community. As the number of Domes at large is not only considerable, but increases daily as time-expired convicts come out of jail, it is necessary to make arrangements beforehand for the admission into these refuges of all those who are anxious to live honestly in future.

The Chumparun settlements will admit of 500 persons being taken in; and I am anxious that this number should not be exceeded, for it will not be possible for the local officers, with due regard to the calls made on their time and attention by other duties, to undertake the responsibility of looking after a larger number of settlers than this. It is, besides, on other grounds, not desirable that the whole tribe should be collected within a circumscribed area.

27. I understand that a settlement is to be made in the Chupra district, which ought to absorb most of the Domes now at large.

Before long, owing to these settlements, the number of Domes who live by crime will have become so small that the police will have no difficulty in dealing with them effectively. Detection will follow on crime, and those who refuse to follow honest occupation will find that they can no longer with impunity follow their old criminal practices. That the Domes are anxious to escape from the conditions under which they have hitherto lived is, I think, proved by the existence of these settlements. Mr Donaldson, the Superintendent of the Buxar Central Jail, in a letter to Dr. Lethbridge, which has been forwarded to me, writes that his Dome convicts have expressed the greatest satisfaction in learning that it might be possible for them to live in peace on being released from jail; and several of them petitioned him to have their names forwarded here, so that, when their sentences expire, they may be allowed to be at Burgaon or Futtehpore.

28. In proof that the money contributed by Government in aid of the scheme has been economically spent, I may point out that an average of 300 people have been maintained for a year; that 55 substantial houses have been built; bullocks, farm-stock, ploughs, and agricultural implements purchased; and a reserve of food grain kept in hand. Funds are now exhausted; and as expenses will have to be incurred in connection with enlarging these settlements, I am compelled to apply for further aid from Government. I would ask that a capitation grant of Rs. 3 per head be sanctioned for the year 1883.

This would place a sum of Rs. 1,050 at our disposal, and arrangements could then be made for enlarging the area of arable land attached to both settlements, and for building more houses. There are over and above incidental expenses in connection with the scheme which I have no means of meeting.

That a sum from the public revenue may with fairness be contributed towards this scheme will, I think, be granted, for most of these new settlers would under other conditions necessarily have found their way into jail, there to be maintained at the public cost; and to the credit of these settlements must be placed the greater security to property which the working of the scheme has brought about. No special pleading is, I know, required to recommend the scheme to the consideration of Government, and I trust therefore that this application for funds will be favourably received.

29. This account, which I have made as brief as possible (my object being to put before you the results of the year's working and the prospects of success in future), gives all main details of interest. I have not thought it necessary to attempt any account of the early history, customs or dialect of this peculiar people.

30. The task of starting these settlements was attended with petty difficulties of daily occurrence, which I need not discuss here; and for a long time it was doubtful whether it would not in the end remain unaccomplished. That success has been attained is due partly to the cordial co-operation of certain zemindars and gentlemen, but mainly to the energy and interest which the local officers threw into the undertaking.

31. I desire to bring to your favourable notice the following zemindars and respectable persons, who from the first have interested themselves in the promotion of this scheme, and have voluntarily and liberally responded to all calls made upon them for assistance :—

The Maharajah Bahadoor of Bettiah,	
The Rani of Ramnaggur,	
Iasm Gir Mohunt of Baklahar,	
Ram Charn Singh,	} Puttidars of mouzah Burgaon.
Kariman Singh,	
Dipan Singh,	
Sant Singh.	
Buldeo Pandit of Futtehpore.	

I shall be glad if you will bring these names before Government for such recognition as you think necessary. Several other zemindars, notably—

Narsingh Sahay of Bagaha,
 Gajadhar Misser of Ratanmala,
 Tapsi Narain Singh of Dhanhe,
 Baboo Harangi Misser, Agent of the Dulhin Saheb of Bettiah,
 Lachmi Narain Singh of Bagaha.
 Matook Dhari Misser,

and other puttidars of Madhubani have rendered assistance which deserves acknowledgment.

32. Both the settlements are in the Bettiah sub-division, and have received Mr. Cameron's special attention. He has identified himself from the first with this scheme, and has been able to give assistance, without which it would not have succeeded. Mr. Showers, who has been District Superintendent throughout the year under report, has taken up the promotion of this scheme with the ability and thoroughness he puts into the performance of all the duties of his office.

33. The officer whose name deserves special mention is Baboo Nokhey Lal Misser, Inspector of Police. This officer was the means, in the first instance, of inducing the Domes to settle; and he has throughout the year displayed both tact and firmness in dealing with them. The general management of the settlements has been his special charge, and he has worked admirably. I desire to bring him prominently to your notice. Head-constable Ramdhani Singh, next to Inspector Nokhey Lal Misser, deserves credit for his successful work in connection with the settlements. I also desire to bring his name to your notice.

Head-constables Lalji Sahay and Ambica Pershad have also done excellent work.

Rainfall, Weather, and State and Prospects of the Crops

Statement showing Rainfall, Weather, and State and Prospects of the Crops in the different Districts of Bengal, as reported to Government during the week ending the 15th September 1883.

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.			
<i>Western Districts.</i>			
BURDWAN DIV.	1 Burdwan. Sept. 15 '83	0.58	Weather—very close. <i>Amun</i> growing well. Rain required for some of the high lands in Cutwa. <i>Aus</i> is being reaped with a fair outturn. Prospects of all crops fair.
	Culina	1.24	
	Cutwa	1.27	
	Kancegunge	3.28	
	2 Bankoora. " 15 "	0.63	Weather—cloudy and clear by turns, with drizzling rain at intervals. Crops in the field are doing very well; but more rain is necessary for realizing the promise they now give. Public health fair.
BURDWAN DIV.	Bishenpore	0.73	
	Maliara	0.72	
	Khatra	2.84	
	3 Beerbhoom. " 15 "	0.89	Weather—hot; occasional showers. <i>Aus</i> and <i>amun</i> crops doing well. Prospects good. Prices somewhat lower. Public health good.
	Rampore Haut	4.49	
BURDWAN DIV.	4 Midnapore " 15 "	0.98	Weather—seasonable. Prospects of crops favourable. Public health good.
	5 Hooghly. " 15 "	2.35	Weather—seasonable. All crops doing well. Harvesting of <i>aus</i> has begun; outturn good. General health good.
	Howrah " 17 "	1.49	Weather—sultry with occasional showers. <i>Aus</i> rice and jute nearly all reaped.
	Oolooberia	0.79	<i>Amun</i> rice and sugarcane doing well.
	<i>Central Districts.</i>		
PRESIDENCY DIV.	6 24-Pergunnahs. Sept. 17 '83	1.46	Weather—hot and clear. Harvesting of early paddy going on; outturn very good. Transplanting of late rice finished. Prospects good. Public health generally good, though cases of fever reported from Baraset and Bussirhat subdivisions.
	7 Nudda. " 15 "	1.14	Weather—cloudy, with occasional showers. Sultry. Harvesting of <i>aus</i> nearly completed. More rain wanted for <i>amun</i> . Fever stationary.
	Kooshtea	1.43	
	Meherpore	1.56	
	Chooudanga	0.43	
PRESIDENCY DIV.	Ranaghat	2.23	
	8 Khoolua. " 15 "	2.45	Weather—warm. Prospects of both <i>aus</i> and <i>amun</i> crops good. Fever prevalent in several places.
	9 Jessore. " 15 "	0.27	Weather—hot and dry for the season of the year. Prospects of <i>amun</i> crop not so good as they were. This is owing to want of rain and to absence of inundation. If no more rain falls soon, <i>amun</i> crop will suffer. Public health generally good; cases of fever reported from Bongong.
	Jhenida	0.46	
	Magura	0.47	
PRESIDENCY DIV.	Narail	0.11	
	Bongong	0.65	
	10 Moushedabad. " 15 "	0.40	Weather—sultry. Rain is much wanted for the late rice. The other crops are doing well. Public health good.
	11 Dinagopore. Sept. 14 '83	0.36	Weather—cloudy with occasional showers. More rain is wanted for <i>amun</i> in parts of the district. <i>Bhadai</i> and jute being cut with a fair outturn.
RAJSHAHY AND COCH BEHAR DIV.	12 Rajshahy. " 15 "	2.53	Weather—cooler, with fairly strong east wind, and occasional heavy but local showers. <i>Aus</i> crop is being harvested. The <i>amun</i> suffering in places from want of rain. <i>Ganja</i> transplanting delayed for the same reason.
	Natore	0.66	
	Nowgong	0.17	
	13 Rangpore. " 14 "	0.26	Weather—very hot. Prospects of <i>amun</i> rice and sugarcane good. Cutting of jute going on, and a few being steeped. Fever prevalent. Cholera still reported from outpost Fulkumar in the Kurigram sub-division.
	Kurigram	0.13	
RAJSHAHY AND COCH BEHAR DIV.	Gaibanda	0.20	
	Nilphamari	Nil	
	14 Bogra. " 15 "	0.38	Weather—extremely hot, dry, and unhealthy. Rain is now very urgently wanted. The want of rain combined with a scorching sun has been extremely injurious to the <i>amun</i> crop on the high lands. Fever is very prevalent.
	15 Pubna. " 15 "	0.62	Weather—very hot and dry. Rain much needed. Rivers falling. Prospects of crops discouraging.
	16 Darjeeling. " 15 "	3.03	Weather—gloomy again, but rain light. Rain badly wanted for standing crops in Terai. In the hills harvesting of Indian-corn and millets progressing.
RAJSHAHY AND COCH BEHAR DIV.	17 Jalpore. " 15 "	3.62	Weather—seasonable. Rice crop promising. Jute backward. Sugarcane in part of district backward. Public health fair.
	Cooch Behar up to 12th.	1.47	Weather—very close and hot. Prospects of late rice continue fair. Tobacco fields are being prepared. Cutting of jute going on. Reports vary regarding this crop. Public health good.
	Dinhatia up to 9th	1.46	
	Mathabhanga up to 8th	0.22	
	Meckligunge up to 8th.	1.76	
<i>Eastern Districts.</i>			
DACCA DIV.	18 Dacca. Sept. 15 '83	0.89	Weather—hot. <i>Aus</i> paddy and jute being cut. Sowing of <i>roachia</i> paddy and <i>maskalai</i> continues. Prospects of crops good.
	Manickgunge	0.63	
	Munsingunge	0.73	
	Naraingunge	1.17	
	19 Farreedpore. " 15 "	0.79	Weather—very hot. The want of rain is rather serious. Prospects of crops still fair generally, but the <i>amun</i> in some places is getting much too dry. Rivers low. Public health generally very fair.
DACCA DIV.	Gosalundo	0.41	
	Madaripore	0.83	
	20 Mackerungge. " 13 "	1.54	Weather—seasonable. Outturn of <i>aus</i> crop satisfactory. Transplanting of <i>amun</i> not yet completed. General health good. Cattle-disease in the sub-division of Patuakhali still continues.
	21 Mymensingh. " 14 "	4.06	Weather—hot. Cloudy sky and less rain generally than is wanted. Winter rice promises well. Rivers have fallen five feet during the last 14 days. Health fair.
	Kishoregunge	0.22	
	Atta	0.84	
	Notrokonah	1.21	

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL—conold.			
Eastern Districts.—conold.			
CHITTAGONG DIV.	22 Chittagong, Sept. 15 '83	3.49	Weather—seasonable. Transplanting of <i>amun</i> nearly finished. Prospects good. Prices stationary. Cattle-disease still reported.
	23 Noakholly, „ 13 „	4.75	Weather—variable, days sultry, early mornings fairly cool. Transplanting of <i>amun</i> paddy nearly completed. Prospects of crops not unfavourable.
	24 Tipperah, „ 13 „	0.38	Weather—very sultry. Wind easterly. Rain wanted. Crops in high lands burning up for want of water. Crops in low lands very good.
	Brahmunbaria „ „	2.86	
	Chandpore „ „	1.35	
CHITTAGONG HILL TRACTS.	25 Chittagong Hill „ 11 „	1.57	Occasional showers. Strong southerly winds varying round to north. General outturn of <i>jum</i> paddy is proving lighter than was expected. Cotton will hardly reach 4 annas of an average crop. Plough lands doing well. Sugar-cane weak.
	Hill Tipperah „ 12 „	2.88	Weather—cloudy and hot. Transplanting of <i>amun</i> rice still going on. Sugar-cane doing well. Public health good.
BEHAR			
PATNA DIV.	26 Patna, Sept. 15 '83	1.39	Weather—hot. <i>Bhadoi</i> crops promising. <i>Kaoni</i> and <i>maka</i> are being cut. Transplanting of paddy still continues. More rain wanted. Cholera reported from Chundi, Hilsa, and Behar thanas.
	Barh „ „	0.77	
	Behar „ „	0.60	
	Dinapore „ „	1.05	
	27 Gya „ 15 „	3.19	Weather—sudden change on 11th. West wind, heavy clouds, and good rain all the way from Jahanabad to Gya: probably wide-spread. Rice was fast drying up. Irrigation was going on vigorously, with much fighting for water. The late rain will have done immense good. Cholera still reported, but abating steadily. Prices high, but not running up fast.
	Aurangabad „ „	0.07	
	28 Shahabad, „ 15 „	0.9	Weather—hot and cloudy. Prospects of winter rice uncertain. More rain needed. Average outturn of <i>bhadoi</i> crop estimated at 11 annas.
	Buxar „ „	0.8	
	Sasseram „ „	2.37	
	Blainboah „ „	0.4	
	29 Durbhuanga, „ 15 „	1.18	Weather—hot almost the entire week for want of rain. Rain is generally wanted. It is said that the crops on high grounds are suffering. Heavy rain, however, fell in the sudder station this morning (15th.) Fever and a few cholera cases reported.
	30 Mousserpoore, „ 15 „	0.53	Weather—cloudy and close, with but little rain, which is much required for all crops. Rice is still being transplanted for the second time, except in the worst portions of the inundated tract.
	Hajepore „ „	0.47	
	Seetamarhi „ „	0.02	
	31 Saran, „ 15 „	1.88	Weather—close and sultry with occasional showers. <i>Bhadoi</i> being harvested with average results. Rain on 12th and 13th, if general throughout district, has been very beneficial, but more wanted for paddy. Cases of fever reported; public health otherwise good.
BHAGALPORE DIV.	Sewan „ „	0.21	
	Gopalgunge „ „	Nil	
	32 Chumpanan „ 15 „	Nil	Weather—hot and cloudy. Rain, which has not fallen now for nearly three weeks, is much wanted. The <i>bhadoi</i> crops have suffered in consequence, and if the drought continues serious injury to the <i>aghani</i> crop must result. Clouds are massed up in every direction, and there is every probability that some heavy showers will fall before long. General health on the whole good. Some cases of cholera and fever reported from interior.
	33 Monghyr, Sept. 15 '83	2.23	Weather—hot and cloudy. Harvesting of <i>bhadoi</i> crops being made. Recent rain very beneficial for <i>aghani</i> crop, but more wanted in the south of district.
	Jamui „ „	0.71	
	34 Bhagulpore, „ 15 „	0.44	Autumn harvest has commenced; outturn 8 to 12 annas. Rain most urgently required for transplanted paddy. Rice in the lower lands promises well, but the higher land paddy has suffered much for want of rain.
	Janka „ „	1.27	
	Muddehpoore „ „	0.76	
	Soopote „ „	Nil	
	35 Purneah, „ 15 „	0.50	Weather—normal. Prospects of crops generally good, but more rain is now much required in the Sudder sub-division where the rainfall is much below the average. Public health fair.
	Kusengunge „ „	0.20	
	Arrareah „ „	3.11	
	36 Maldah, „ 15 „	0.88	Weather—still and oppressive. Rainfall scanty. Rain is much wanted to improve the condition of the transplanted winter rice crop. Prices of food-grains have fallen a little. General health good.
	37 Southal Pergah, „ 15 „	0.69	Weather—close and cloudy, with passing showers. More rain wanted at Deoghur, Rajmehal, and Jaintara. The Indian corn crop in Rajmehal is a good one, elsewhere poor.
	Deoghur „ „	0.14	
	Rajmehal „ „	1.37	
	Jaintara „ „	1.02	
	Pakour „ „	3.03	
	Godua „ „	3.22	
ORISSA			
ORISSA DIV.	38 Cuttack, Sept. 14 '83	5.23	Weather—seasonable with occasional showers of rain. <i>Beali</i> being harvested, with prospect of a fair outturn. <i>Sarad</i> being weeded and thriving well. Common rice selling at from 20 to 28 seers per rupee. Public health good. A few cases of cholera in the town.
	39 Pooree, „ 13 „	3.39	Weather—hot and cloudy, with showers occasionally. Prospects of crops continue good. Some damage done to <i>sarad</i> paddy in thana Banpur. Small pox is still reported from Banpur. Cattle-disease reported from thana Gope. Common rice selling at from 25 to 39 seers per rupee.
	Khoorda „ „	4.87	
CHOTA NAGPORE.	40 Balasore, „ 14 „	0.92	Weather—seasonable with occasional rain. Weeding going on vigorously. <i>Beali</i> is being harvested at places. Standing crops doing well. Public health good.
CHOTA NAGPORE.			
<i>South-West Frontier Agency.</i>			
CHOTA NAGPORE.	41 Hazaribagh, Sept. 14 '83	2.25	Weather—warm and close. Harvesting of <i>bhadoi</i> crops continues. Prospects of rice crop favourable. General health good.
	42 Lohardugga „ 15 „	2.94	Weather—seasonable. Recent rain has done much good in Palamow. <i>Bhadoi</i> crops in that sub-division not expected to be more than 10 annas. Outturn in head-quarters sub-division also under an average. With the exception of cholera in Hussanabad and slight fever in Lohardugga, public health good.
	Daltongunge „ „	2.05	
	43 Singhbhum, „ 14 „	2.85	Weather—wet during the first part of the week; latterly fine, with a strong sun. Prospects of crops continue very favourable. Upland rice is being reaped with good outturn. Fever prevalent. Public health otherwise good.
CHOTA NAGPORE.	44 Maubhoom, Sept. 15 „	1.54	Weather—rainy and close. All crops doing very well. Small-pox at Topchanchi; with this exception public health good.
	Govindpore „ „	2.76	

Published for general information.

CALCUTTA, STATISTICAL DEPT.,
The 18th September 1883.COLMAN MACAULAY,
Secy. to the Govt. of Bengal.

The following Statement shows the Quantities of the Principal Staples of Traffic imported into Calcutta from the Interior during the month of June 1883.

IMPORTS INTO CALCUTTA.

Whence imported.	FOOD-GRAINS.							FIBROUS PRODUCTS.		OIL-SEEDS.		Tea, Indian.	Cotton, raw.	Silk, raw.	SUGAR.	
	RICE AND PADDY.			Wheat.	Gram and pulses.	Other food-grains.	Total.	Jute, raw.	Gunny-bags.	Linsed.	Mustard-seed.				Refined.	Unrefined.
	Rice.	Paddy.	Total (in rice).													
HERGAL.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	No.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Burdwan	9,315	6,232	15,547	908	3,971	419	17,508	1,574	317	...	810	178	70	194	1,123	142
Beerbhoom	1,351	...	1,351	...	...	...	4,351	...	...	...	...	...	3	350	...	...
Mudrapore	1,75,418	80,225	2,55,643	...	4,956	...	2,60,599	...	...	1,000	10,835	112	...	881	...	1,024
Hoojaly	35,177	2,114	37,291	1,00,021	33,729	5,471	1,76,028	14,835	602,050	...	11,332	21,030	1,732	16	2,354	16,591
21-Perannahs	1,84,824	25,851	2,04,987	122	625	...	2,05,704	27,371	752,120	...	129	201	1,670	...	25,008	17,205
Nandan	1,150	...	1,150	14,591	40,453	1,161	57,400	25,478	2,343	...	9,891	150	...	424	4,200	20,779
Khamra	3,762	6,400	10,162	190	50	...	7,002	1,051	...	...	...	...	...	...	130	16,041
Jessore	14,375	...	14,375	452	16,139	11	30,577	2,021	240	...	2,350	...	...	...	90	7,131
Koorshedabad	...	...	...	3,083	0,821	217	10,721	093	...	...	430	200	...	...	...	...
Dumapore	16,501	...	16,501	...	...	...	15,891	243	1,200	...	...	...	16	68	...	...
Rajshahye	...	...	...	220	1,275	...	1,495	5,707	120	...	2,29	...	...	...	...	...
Runkpore	...	...	...	...	136	...	136	25,827	220,500	...	312	...	...	...	...	...
Boara	21,383	...	21,383	...	...	...	24,083	1,275	120	...	...	...	...	...	...	...
Patna	...	...	...	545	...	...	...	1,04,010	303,240	...	2,354	300	...	...	...	...
Darjeeling	...	...	...	...	...	...	...	...	...	...	...	12,002	...	...	...	...
Jalpaiguri	...	...	...	...	...	...	...	8,013	218,510	...	...	7,427	...	...	...	...
Dacca	20,452	...	20,452	...	...	...	24,350	1,07,810	60	...	1,401	...	...	...	...	...
Purandpore	10,443	...	10,443	5,002	0,62	...	22,700	95,025	450	...	32,338	2,338	...	...	...	...
Backergunge	2,45,559	...	2,45,559	...	700	...	2,47,350	...	...	...	...	...	...	...	...	...
Mymensing	616	...	616	...	...	...	616	4,499	...	...	...	...	...	...	...	...
Tripurah	400	...	400	...	...	...	400	...	...	...	...	...	...	...	...	...
Chittagong	1,050	...	1,050	...	...	...	1,050	...	...	...	...	...	...	...	...	...
Nonkholy	42,303	...	42,303	...	...	...	42,303	52	...	...	...	...	...	...	...	...
Total of Hergal	7,95,179	1,20,955	9,16,134	1,97,245	1,15,084	7,675	11,19,780	4,85,832	2,063,005	73,091	26,064	20,228	7,359	1,711	33,991	78,861
BHAR.																
Patna	15	...	15	1,84,981	40,372	21,137	2,06,530	...	...	1,00,313	21,102	...	...	...	12,553	2,515
Gya	...	...	...	43,418	278	...	43,696	...	...	16,734	1,384	...	...	...	...	...
Shahabad	...	...	...	2,85,152	9,700	...	2,94,852	...	...	87,553	...	...	...	...	6,007	374
Moodabehnore	...	...	...	...	7,137	...	7,137	...	...	9,723	2,198	...	...	...	...	...
Dumraon	...	...	...	912	0,945	1,033	8,850	...	...	24,291	1,911	...	...	...	268	2,431
Champurua	...	...	...	...	...	...	...	...	...	4,054	1,711	...	...	...	...	1,567
Mongla	...	...	...	34,800	41,608	...	76,408	...	...	16,730	4,340	...	...	...	...	...
Shakulpore	11	...	11	21,008	270	...	21,278	...	...	1,021	4,005	...	...	...	13	...
Purneah	...	...	...	150	...	...	150	...	...	...	...	...	...	...	...	...
Maidhat	800	...	800	2,119	...	...	2,919	...	...	...	...	...	...	...	...	...
Southern Perannahs	...	...	...	16,828	...	...	16,828	...	...	11,104	...	...	...	...	...	...
Total of Bihar	884	...	884	5,10,515	1,10,522	2,045	6,23,082	...	...	3,31,202	49,001	...	...	141	18,511	6,074
ORISSA.																
Cuttack	4,070	...	4,070	1,500	...	...	5,570	...	...	...	...	...	...	...	...	...
Balsore	64,000	10,050	74,050	162	...	...	74,212	1,581	...	...	...	...	...	...	...	...
Total of Orissa	68,070	10,050	78,120	162	...	...	75,792	1,581	...	...	...	...	...	...	...	...
CHOTA NAGPUR.																
Hazaribagh	...	...	...	1,024	...	...	1,024	...	...	...	...	25	...	...	...	...
Almuboom	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total of Chota Nagpur	...	...	...	1,024	...	...	1,024	...	...	1,000	...	25	...	...	...	...
Grand Total of supplies from the Provinces under the Lieutenant-Governor of Bengal.	8,55,120	1,31,005	9,86,125	6,78,570	2,27,602	37,370	18,80,615	4,87,413	2,063,005	805,395	64,205	20,228	7,359	1,855	52,522	85,870
OTHER PROVINCES.																
North-Western Provinces and Pindh	12	...	12	22	8	...	43	477	400	5,450	16,008	25,015	725	8	...	...
Punjab	2	...	2	14,584	59,653	...	74,237	...	...	1,07,508	1,34,753	701	27,150	7	300	43
Central Provinces	...	...	...	1,07,000	1,367	...	1,08,367	...	...	2,781	1,83,024	680	2,351	...	...	...
Rajputana States	...	...	...	15,811	4,503	...	20,314	...	...	...	518	...	...	...	...	...
Bombay	...	...	...	...	510	...	510	...	...	...	7,016	...	...	...	...	...
Madras	...	...	...	...	2,706	...	2,706	...	...	...	...	16,175	...	...	...	...
British Burmah	10	...	10	...	...	...	1,169	...	...	...	...	...	...	...	2,715	4
Other places	1	...	1	...	...	...	...	40	750	...	...	...	...	110	...	...
Grand Total of 1883	8,55,120	1,31,005	9,86,125	6,78,570	2,27,602	37,370	18,80,615	4,87,413	2,063,005	805,395	64,205	20,228	7,359	1,855	52,522	85,870
Imports in June, 1882	1,00,000	1,00,000	2,00,000	7,71,012	2,07,055	35,321	20,00,032	4,11,123	1,028,177	4,52,256	2,02,372	47,810	42,282	1,582	70,536	60,580

* One mound of paddy is equivalent to 25 seers of rice.

† Exclusive of bags obtained by local manufacture.

The Sea-borne Trade of Calcutta in these Staples during the month of June 1883 was as follows:—

EXPORTED FROM CALCUTTA.															
To Indian ports, viz.—															
Madras	1,41,453	105	1,41,558	...	...	...	1,41,618	10,025	1,724,075	...	...	...	...	7,530	...
Calcutta	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other ports in Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Indian ports	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port of Callao	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other foreign ports	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total of Indian ports	1,41,453	105	1,41,558	1,572	10,024	71	1,42,226	17,050	1,724,075	...	...	...	...	7,530	...
Port of Callao	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other foreign ports	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total of Foreign ports	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Total of Exports	1,41,453	105	1,41,558	1,572	10,024	71	1,42,226	17,050	1,724,075	...	...	...	...	7,530	...
Imports in June, 1882	1,41,453	105	1,41,558	1,572	10,024	71	1,42,226	17,050	1,724,075	...	...	...	...	7,530	...

The following Statement shows the several Routes followed by the Trade in the Principal Staples of Traffic imported into Calcutta during the month of June 1883.

IMPORTS INTO CALCUTTA.

SPECIFICATION OF ROUTES.	FOOD-STAPLES.					FIBROUS PRODUCTS.		OILSEEDS.		Tea. Indian.	Cotton, raw.	Silk, raw.	SUGAR.	
	Rice.	Paddy.	Wheat.	Gram and pulses.	Other food- grains.	Jute, raw.	Gunny- bags.	Linseed.	Mustard- seed.				Refined.	Unre- fined.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	No.	Mds.	Mds.				Mds.	Mds.
By country boats ...	6,70,794	1,22,806	77,658	91,921	4,920	1,10,662	1,101,976	55,130	27,233		2,470	813	7,343	43,406
By river steamers ...	12		22	8		1,83,655			15,339	19,559	789	8		
By rail ...	41,080		21,01,767	1,81,378	31,361			4,58,940	3,01,091	1,721	30,729	595	18,520	7,150
By road ...	55,120	0,350	19,146	17,054	440	1,32,441	814,040	20,921	2,002	25,449	3,031	413	216	20,800
By sea ...	53,923	1,760	3,000	4,008		25,125	147,400	16			1,551		26,574	14,338
Grand Total of Imports ...	8,54,154	1,31,005	22,59,550	2,07,460	57,370	4,84,495	2,072,956	8,41,433	4,96,215	55,082	58,895	1,380	61,535	85,917
In June ...	9,08,700	1,80,526	7,71,072	2,07,058	83,921	4,41,182	1,633,177	4,52,256	2,92,373	47,839	42,232	1,592	70,536	63,580

The following Statement shows the Values, Quantities, and Numbers of the Principal Staples of Traffic exported inland from Calcutta during the month of June 1883.

EXPORTS FROM CALCUTTA.

Whither exported.	Cotton piece-goods.		Cotton twist.		Salt.	Gunny- bags.	Whither exported.	Cotton piece-goods.		Cotton twist.		Salt.	Gunny-bags.
	European.	Indian.	European.	Indian.				European.	Indian.	European.	Indian.		
	Rs.	Rs.	Mds.	Mds.				Rs.	Rs.	Mds.	Mds.		
RECAL.							CHOTA NAGPORE.						
Burdwan ...	2,09,340		458	840	20,788	25,655	Hazaribagh ...	7,050		8	65	5,930	3,430
Barrackpore ...	80,375	100	210	238	11,827	16,590	Manbhum ...	30,675	430	11	603	0,051	1,340
Malda ...	70,194		780		250	6,160	Total of Chota Nagpore ...	41,325	430	19	743	12,037	4,070
Bengal ...	73,162	7,702	634	48	221	35,303	Grand total of supplies into						
24-Pergunnahs ...	1,60,166	22,640	698	47	7,795	48,555	the provinces under the						
Nadwa ...	2,79,376		1,609		12,457	10,420	Lieutenant-Governor of						
Khulna ...	680				3,228		Bengal.	39,43,600	59,481	10,825	4,126	4,73,615	877,071
Jessore ...	47,571		235		7,521	350	OTHER PROVINCES.						
Moorsheadabad ...	1,30,425		27	16	6,475	2,640	Assam ...	3,17,401				24,602	630
Dumra ...	61,200		224		4,768	10	North-Western Provinces						
Rajshahi ...	1,06,480		134		19,043	1,530	and Oudh ...	13,55,175	8,040	3,377	541	1,154,115	700,000
Banga ...	1,72,124		148		18,123	60	Punjab ...	10,56,775	5,400	1,701	10	9,455	70,425
Borra ...	60,950		138		5,006	3,810	Central Provinces ...	30,225		260			5,421
Pubna ...	1,02,460		366		53,140	50	Rajputana States ...	62,125	180	317	7		1,781,078
Dumra ...	44,550		18		15,328		Bombay ...	17,541	1,400				211,010
Dumra ...	5,24,817		1,473		10,493	9,210	Madras ...	91,336	3,020	2,040	143		24,000
Dumra ...	2,39,510		450		40,080	7,470	Pondicherry ...			160			64,700
Backergunge ...	37,081				11,700		British Burmah ...	1,36,361		621	3,020		3,400,000
Dumra ...					8,050		Other places ...	17,072	8,000	8	3,410		
Dumra ...	45,068					400	Grand total of 1883 ...	99,55,820	60,222	19,332	12,105	5,05,712	8,355,005
Dumra ...	4,100				2,675		Exports in June 1882 ...	92,90,107	41,871	24,251	6,408	8,80,634	9,350,005
Total of Bengal ...	27,72,088	29,841	7,875	1,097	2,77,144	168,696	The Sea-borne Trade of Calcutta in these Staples during the month of June 1883 was as follows:-						
BEHAL.							IMPORTED INTO CALCUTTA—	Rs.*	Rs.	Mds.*	Mds.	Mds.	No.
Patna ...	1,90,925	90	104	207	72,203	205,030	From Foreign Ports—						
Gya ...	46,125	1,170	39	98	14,027	10,005	United Kingdom ...	87,31,754		12,014		6,70,382	
Alahabad ...	1,44,925		139	79	20,451	105,393	Other Foreign ports ...	36,370		180		1,00,220	716
Muzaffarpore ...	41,550	810			8,116	8,050	Total of Foreign trade ...	87,98,124		12,194		7,70,607	
Dumra ...	1,06,650	450	23	270	17,254	48,035	From Indian Ports—						
Champur ...	1,33,650	1,260			1,554	4,130	Bombay ...	6,821	1,70,240		0,507	25,215	
Monah ...	24,700	2,880	30	201	9,800	60,200	Madras ...	300					
Bangalore ...	30,825	1,200	101	150	15,067	43,083	British Burmah ...	2,420	300				8,550
Punjab ...	1,15,650		62		2,000	635	Other Indian ports ...		75				
Madras ...					2,000		Total of Interport trade ...	8,541	1,70,615		0,507	25,215	8,484
Southern Pergunnahs ...	1,11,000	270	69	23	23,401	40,000	Grand Total of 1883 ...	87,70,003	1,70,615	12,538	0,507	7,98,010	9,200
Total of Behar ...	9,65,600	8,100	672	1,117	1,82,604	585,155	Imports in June 1882 ...	98,31,552	1,15,000	10,450	0,400	7,72,802	80
ORISSA.							* As per tariff declaration value.						
Cuttack ...	57,800	1,500	2,204	764		105,230							
Nasir ...	57,800	1,500	2,204	764		105,230							
Total of Orissa ...	57,800	1,500	2,204	764		105,230							

The following Statement shows the several Routes followed by the Trade in the Principal Staples of Traffic exported from Calcutta during the month of June 1883.

SPECIFICATION OF ROUTES.	COTTON PIECE-GOODS.		COTTON TWIST.		Salt.	Gunny-bags.
	European.	Indian.	European.	Indian.		
	Rs.	Rs.	Mds.	Mds.		
By country boats ...	1,24,090	12,751	1,144	1	1,32,067	53,196
By river steamers ...	4,74,445		1,207		21,84	
By rail ...	40,74,075	20,850	7,173	3,806	2,51,320	2,54,186
By road ...	17,10,060		3,391		1,15,170	32,390
By sea ...	2,04,172	15,630	1,081	46	6,013	88,330
Grand Total of Exports in June ...	69,56,820	66,222	19,332	12,105	6,05,712	8,355,005
1882 ...	92,90,107	41,871	24,251	6,408	8,80,634	9,350,005

Results of the Meteorological Observations taken at the Alipore Observatory from
9th to 15th September 1883.

Month.	Date.	Maximum in sun.	Number of hours of bright sunshine.	Mean pressure barometer at 33 Fahr.	TEMPERATURE.				HYGROMETRY.				WIND.		Miles recorded.	Rain.	WEATHER.
					Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Prevailing direction.				
1883.		T		Inches.	—	—	—	—	—	Inches	T	%.			Inches		
Sept.	9th	130.5	0.6	29.610	81.1	85.0	7.3	77.7	78.7	0.052	77.7	80	SE by S, and S by W	68	0.09	Chiefly cloudy, o, g, d, p.	
"	10th	157.6	0.2	29.612	81.5	85.4	7.7	77.7	79.0	0.061	78.0	80	S by W, SSE and S	92	1.04	Chiefly cloudy, o, g, p.	
"	11th	168.0	10.2	29.626	83.2	87.8	9.1	78.7	80.2	0.090	78.0	87	S by W, and S by E	69	0.16	Partially cloudy, p.	
"	12th	149.6	3.8	29.628	82.5	86.8	6.6	78.2	79.7	0.081	78.6	88	S by E and SW by S	72	0.21	Partially cloudy, o, g, d, p.	
"	13th	165.0	9.3	29.660	84.3	89.1	11.9	78.2	81.0	1.016	79.7	87	SW by S and S	86	0.01	Partially cloudy, g, t, d, tr.	
"	14th	162.0	9.0	29.662	84.7	89.3	8.5	80.8	81.2	1.019	79.8	86	S and SSW	115	Nil.	Partially cloudy.	
"	15th	140.6	2.3	29.696	83.2	88.1	7.0	80.2	79.0	0.965	78.2	85	SW	71	0.16	Chiefly cloudy, o, g, p.	

The mean pressure of the seven days

The average pressure of the corresponding period for 24 years, S. G.'s Office

The total number of hours of bright sunshine of the seven days

The mean temperature of the seven days

The average temperature of the corresponding period for 24 years, S. G.'s Office

The extreme variation of temperature during the seven days

The maximum temperature during the seven days

The highest velocity of the wind in one hour during the seven days

The highest pressure of the wind on one square foot during the seven days

The mean relative humidity during the seven days

The average relative humidity of the corresponding period for 24 years, S. G.'s Office

The total fall of rain from 9th to 15th September 1883

The average fall of the corresponding period for 24 years, S. G.'s Office

The total fall from 1st January to 15th September 1883

The average fall of the corresponding period for 24 years, S. G.'s Office

The mean pressure, temperature, &c., are deduced from the traces of the Barograph and Thermograph, and from observations made at 6h, 10h, 16h, and 22h.

The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the standard Newman's No 86 formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV and V of the official tables computed in the Meteorological office, and based on Regnault's modifications of August's formula.

The direction of the movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

o overcast, g gloomy, d drizzling rain, t thunder, p passing temporary showers, tr lightning reflection.

ALEXANDER PEDLER,

METEOROLOGICAL OFFICE, INDIA,
The 17th September 1883.

For Meteorological Reporter to the Government of India.

Meteorological Report of the Province of Bengal

METEOROLOGICAL DIVISION.			STATION OBSERVATIONS.													
DISTRICT.	Representative station.	AIR PRESSURE.			WIND.		TEMPERATURE.							Average humidity at 10 A. M.	Average cloud amount at 10 A. M. for week.	
		Mean barometric height, 10 A. M.	Mean reduced to sea-level.	Variation from mean.	Prevailing direction.	Mean wind velocity.	Highest during week.	Lowest during week.	Mean maximum temperature.	Mean minimum temperature of week.	Mean daily temperature of week.	Variation from normal mean of week.	Mean 10 A. M. temperature.			
ORISSA.	Pooree	Gopalpore	29.061	29.714	—	SSW	201	89.0	74.8	84.5	80.5	82.5	—	85.8	81	5.0
		False Point	29.080	29.702	—0.040	W & S W	240	91.0	76.1	86.0	78.4	82.7	—1.0	84.5	79	7.1
	Cuttack	Cuttack	29.013	29.694	—0.042	SSW	62	92.4	76.8	87.0	77.0	82.0	—0.0	85.3	77	7.1
	Balasore	Balasore	29.035	29.693	—	SW	96	91.0	76.0	87.3	78.5	82.0	—	73.9	83	6.7
	South-West Midnapore	Saugor Island	29.081	29.707	—0.037	SW	250	89.2	77.5	86.1	78.8	82.4	—0.8	83.4	84	7.3
SOUTH-WEST BENGAL.	South 24-Pergunnahs	Midnapore	29.558	29.692	—	SE	—	89.5	76.8	87.4	77.5	82.5	—	86.1	77	6.0
	24-Pergunnahs	Calcutta	29.677	29.690	—0.042	V	105	90.0	77.7	84.5	78.0	82.7	—0.3	83.5	84	9.0
	Howrah	Howrah	29.599	29.698	—0.041	E	80	92.0	78.4	89.2	79.2	84.5	+0.8	83.5	77	8.0
	Bankura	Bankura	29.316	—	—	SE	93	90.5	75.0	89.4	77.1	83.5	—	85.0	78	4.0
	Bierbhoom	Rangunge	29.030	29.705	—0.037	SE	83.0	91.7	70.8	89.8	78.3	83.0	—0.7	80.5	80	8.0
	West Burdwan	Burdwan	29.030	29.705	—0.037	SE	83.0	91.7	70.8	89.8	78.3	83.0	—0.7	80.5	80	8.0
	Moorshedabad	Berhampore	29.030	29.705	—0.037	SE	83.0	91.7	70.8	89.8	78.3	83.0	—0.7	80.5	80	8.0
	Nudda	Nudda	—	—	—	—	—	Observatory not commenced.								
	Jessore	Jessore	29.692	29.715	—0.039	S & E	117	82.5	78.4	89.4	79.0	84.5	+0.4	85.7	81	8.1
	Khoolna	Khoolna	29.690	29.786	—0.003	SE	158	86.1	74.1	84.5	79.4	80.0	—2.0	81.1	88	7.0
EAST BENGAL.	Chittagong	Chittagong	29.690	29.786	—0.003	SE	158	86.1	74.1	84.5	79.4	80.0	—2.0	81.1	88	7.0
	Chittagong Hill Tracts	Demagiri	—	—	—	—	—	Observations not received.								
	Backerganj	Barrisal	29.700	—	—	SE & S	245.4	87.1	75.4	85.0	77.5	80.7	—	83.5	91	5.5
	Nonkholy	Nonkholy	29.707	29.747	—	SSW	74.0	87.7	75.0	85.0	78.0	81.4	—	82.0	87	6.9
	Furreedpore	Furreedpore	29.672	—	—	SE	166.8	88.5	77.9	87.0	78.8	83.1	—	84.8	80	5.1
	Dacca	Dacca	29.704	29.730	—0.024	SE & S	118	89.8	77.7	88.0	79.1	84.0	+0.4	84.9	80	6.7
	Commillah	Commillah	29.730	29.706	—	SSW & SE	—	85.1	75.8	82.1	77.0	79.0	—	82.1	84	5.9
	Mymensingh	Mymensingh	29.676	—	—	SE	144	91.5	77.0	89.0	78.2	83.7	—	85.0	80	6.4
	Bogra and Pubna	Serajpore	29.678	—	—	E	199	89.9	76.2	84.0	78.7	83.7	—	84.1	81	2.3
	Rajshahiye	Rampore Beaulah	29.608	29.683	—	E & SE	185	91.0	77.5	89.3	78.1	83.7	—	85.0	83	5.9
NORTH BENGAL.	Dinagopore	Dinagopore	29.550	29.691	—	SE	140	91.0	75.1	89.0	77.5	83.6	—	83.0	81	6.7
	Rangpore	Rangpore	29.618	29.742	—	SE	120	91.8	75.0	90.0	77.1	83.0	—	83.0	74	5.0
	Julpigoree	Julpigoree	29.440	29.727	—	NE	160	91.0	75.1	89.3	76.6	83.1	—	82.0	83	5.7
	Cooch Behar	Cooch Behar	29.440	29.727	—	NE	160	91.0	75.1	89.3	76.6	83.1	—	82.0	83	5.7
	Darjeeling Hill District	Darjeeling	22.966	—	—	NE	58	67.0	56.8	66.4	67.8	61.9	—	62.2	—	6.0
NORTH BENGAL.	Purneah	Purneah	29.577	29.703	—0.020	E	34	92.7	73.8	90.9	77.7	84.5	+1.0	85.5	83	5.9
	North Bhagulpore	North Bhagulpore	29.577	29.703	—0.020	E	34	92.7	73.8	90.9	77.7	84.5	+1.0	85.5	83	5.9
	Mozufferpore	Mozufferpore	29.550	29.708	+0.15	ENE	117	91.4	75.4	89.3	79.0	84.0	+0.8	84.4	80	7.3
	Durbhunga	Durbhunga	29.550	29.708	+0.15	ENE	117	91.4	75.4	89.3	79.0	84.0	+0.8	84.4	80	7.3
	Chumparun	Motihari	—	—	—	E	—	90.1	75.4	87.5	78.0	82.5	—	87.5	80	2.3
SOUTH BENGAL.	Sarad	Chupra	29.440	—	—	E	24	94.0	73.0	91.5	79.0	85.3	—	85.4	90	5.9
	Shahabad	Dehree	29.331	29.684	—	WSW & SE	—	87.4	76.0	86.7	78.7	82.2	—	85.8	78	6.1
		Buxar	29.439	29.679	—	SE	—	93.9	74.8	91.4	78.3	84.0	—	86.0	83	6.0
		Arrah	29.465	29.690	—	ESE	137	93.4	75.6	90.7	78.5	84.6	—	84.0	82	5.9
	Gya	Gya	29.282	29.657	—0.073	E & calm	48	93.7	74.3	92.1	74.9	83.5	—0.7	85.2	75	10.0
SOUTH BENGAL.	Patna	Bankipore	29.506	29.689	—0.040	E	141	93.4	76.2	91.2	79.3	85.3	+0.5	84.3	80	8.3
	South Bhagulpore	Bhagulpore	29.535	29.776	—	E & S E	96	92.0	77.0	90.6	78.6	84.6	—	86.1	79	3.8
	Monghyr	Monghyr	29.535	29.776	—	E & S E	96	92.0	77.0	90.6	78.6	84.6	—	86.1	79	3.8
	South 24-Pergunnahs	Doomka	29.199	—	—	SE	—	85.0	75.8	87.8	76.7	82.5	—	83.0	90	5.6
	Hazaribagh	Hazaribagh	27.635	29.680	—0.047	V	171	85.4	71.2	88.8	72.5	78.1	—0.4	79.1	82	10.0
CHITTA NAGPUR.	Lohardugga	Lohardugga	27.673	29.680	—	—	—	85.8	69.5	81.7	70.9	76.3	—	77.4	86	7.9
	Manbhoom	Manbhoom	27.673	29.680	—	—	—	85.8	69.5	81.7	70.9	76.3	—	77.4	86	7.9
	Singhbhoom	Singhbhoom	28.905	—	—	E	—	—	—	—	—	—	—	—	—	7.0

Explanation of Summary.—The normal means of air pressure and temperature are the arithmetical averages or means of the readings during the same season. The humidity of the atmosphere is expressed as a percentage, saturated air being represented by 100. A clear sky is denoted by 0 and an overcast sky by 100. The normal means are the arithmetical means or averages of the rainfall in that district determined from the returns sent in by the sub-divisions from that district, (i.e.) the total rainfall at the sub-divisional stations in the district during the season divided by the number of stations. A rainy

for the week ending Friday the 14th September 1883.

DISTRICT OBSERVATIONS.													Representative station.	DISTRICT.	METEOROLOGICAL DIVISION.
Rainfall of week at observing station.	Mean for district.	RAINFALL.													
		Of week.	Since 1st of month.			Since 1st of May.			Average number of rainy days during the week.	Normal number of rainy days of week.					
			Normal for district.	Mean for district.	Normal mean.	Variation.	Mean for district.	Normal mean.			Variation.				
0.3													Gopalpore ...	ORISSA.	
1.15	0.58	3.83	7.59	5.44	+2.15	52.03	40.77	+11.26	3.8	4.5	False Point ...	Pooree ...			
1.63	0.87	2.35	7.40	4.50	+2.90	40.55	39.15	+1.40	2.7	3.5	Cuttack ...	Cuttack ...			
0.73	1.48	2.08	4.48	5.50	-1.02	40.78	40.76	+0.02	3.7	3.0	Balasore ...	Balasore ...			
3.92	2.33	2.91	5.55	0.06	-5.49	47.87	48.00	-1.13	5.7	4.3	Baugor Island ...	South-West Midnapore ...	SOUTH-WEST BENGAL.		
1.24	0.86	1.00	2.38	4.25	-1.87	38.72	41.55	-2.83	1.7	3.6	Midnapore ...	South 24-Pargunnahs ...			
1.65	1.08	1.98	2.23	4.83	-2.60	41.01	42.39	-1.38	4.1	4.1	Calcutta ...	24-Pargunnahs ...			
0.45	1.60	2.25	1.59	4.20	-2.61	41.10	38.26	+2.84	4.0	3.8	Burdwan ...	Howrah ...			
1.58	1.20	2.30	3.77	4.87	-1.10	45.59	43.22	+2.37	3.8	3.9	Ranigunge ...	Hoochly ...	SOUTH-WEST BENGAL.		
1.72	2.15	3.12	2.65	5.07	-2.42	35.76	40.87	-5.11	4.7	3.7	Berhampore ...	Barkkora ...			
	1.12	2.46	2.00	4.42	-2.42	31.47	41.42	-10.95	3.7	3.4	... ..	West Burdwan ...		
0.64	1.20	2.50	2.40	4.04	-1.64	36.00	44.67	-8.67	3.4	3.7	Jessore ...	Moorsheadabad ...			
2.47	0.63	3.50	7.03	7.86	-0.83	113.14	90.32	+22.82	4.0	4.3	Chittagong ...	Nudda ...	SOUTH-WEST BENGAL.		
	1.40	3.16	3.03	0.38	-2.75	57.09	64.53	-7.44	7.0	5.0	Dumagri ...	Jessore ...			
1.10	2.37	2.89	3.68	0.82	-2.86	44.10	60.07	-15.97	4.3	4.0	Burrial ...	Khoolna ...			
0.30	4.30	4.13	0.20	9.79	-9.59	16.42	92.95	-76.53	6.5	4.9	Noakholly ...	Chittagong Hill Tracts ...			
1.40	0.73	2.26	1.80	5.08	-3.28	36.24	47.80	-11.56	2.3	3.7	Furzedpore ...	Backergunj ...	SOUTH-WEST BENGAL.		
0.70		2.50		0.20			52.17			3.5	Dacca ...	Noakholly ...			
0.36	1.21	2.02	4.30	5.95	-1.65	56.65	60.13	-3.48	4.2	3.8	Commillah ...	Furzedpore ...			
3.46		3.17		6.53			57.21			3.8	Mymensingh ...	Dacca ...			
0.69	0.76	2.70	1.34	4.91	-3.57	34.44	46.95	-12.51	2.8	3.0	Mymensingh ...	Commillah ...	SOUTH-WEST BENGAL.		
2.75	1.06	3.12	1.79	6.31	-4.52	29.11	46.12	-17.01	4.3	3.6	Serajunge ...	Mymensingh ...			
0.90	1.49	4.17	1.89	7.27	-5.38	30.90	51.37	-20.47	3.8	3.1	Rampore Beaulah ...	Bogra and Pabna ...			
0.80	1.40	3.30	1.58	7.10	-5.52	39.78	64.90	-25.12	3.5	3.0	Dinagore ...	Rajshahye ...			
4.19	2.41	4.18	3.88	10.40	-6.52	87.36	94.28	-6.92	4.4	3.2	Rangpore ...	Dinagore ...	NORTH BENGAL.		
2.7	0.14	5.97	9.17	12.35	-3.18	127.04	139.01	-11.97	6.0	4.8	Jalpigoree ...	Rangpore ...			
0.41	1.39	4.19	1.63	7.54	-5.91	46.21	49.10	-2.89	2.8	3.3	Darjeeling ...	Jalpigoree ...			
0.20	0.74	1.40	0.69	4.34	-3.65	38.18	34.32	+3.86	2.3	2.5	Purneah ...	Cooch Behar ...			
	0.23	1.58	0.31	3.54	-3.23	29.87	36.20	-6.33	1.0	2.2	North Bhanulpore ...	Darjeeling Hill Districts ...	NORTH BENGAL.		
2.35	1.40	1.90	1.91	3.93	-2.02	32.32	33.64	-1.32	6.0	2.5	Mosufferpore ...	Purneah ...			
0.20											Durbhunga ...	North Bhanulpore ...			
2.77	2.23	2.00	3.23	5.67	-2.44	27.40	33.14	-5.74	3.2	3.4	Durbhunga ...	Mosufferpore ...			
1.09											Almohar ...	Durbhunga ...	NORTH BENGAL.		
2.94	2.40	1.84	2.94	3.23	-0.29	34.97	34.24	+0.73	6.0	2.5	Chupra ...	Almohar ...			
1.36	1.43	1.61	1.88	3.60	-1.72	38.67	33.13	+5.54	5.2	2.8	Dehree ...	Chupra ...			
0.44	1.33	1.97	1.97	4.35	-2.38	33.44	35.47	-2.03	3.2	3.1	Buxar ...	Dehree ...			
0.53	1.05	2.67	2.90	5.23	-2.33	36.73	41.43	-4.70	5.3	3.2	Arrah ...	Buxar ...	SOUTH BENGAL.		
2.35	2.00	2.00	5.73	4.10	+1.63	36.68	40.50	-3.82	5.7	4.1	Gya ...	Arrah ...			
3.29	2.51	2.08	4.90	4.72	+0.18	42.81	41.00	+1.81	4.2	4.1	Bankipore ...	Gya ...			
2.83	2.02	2.02	4.68	5.04	-0.36	47.79	47.18	+0.61	4.0	4.3	Bankipore ...	Bankipore ...			
											Shahabad ...	Patna ...	SOUTH BENGAL.		
											Shahabad ...	South Bhagulpore ...			
											Shahabad ...	Monghyr ...			
											Shahabad ...	Sonthal Pargunnahs ...			
											Hazaribagh ...	Hazaribagh ...	SOUTH BENGAL.		
											Manbhoom ...	Manbhoom ...			
											Manbhoom ...	Manbhoom ...			
											Manbhoom ...	Manbhoom ...			

period for the past 12 years. The variations are negative when the mean for the week is less than the corresponding normal mean and positive when greater. by 10. The number denoting cloud amount represent the part of the sky covered, the whole sky being denoted by 10. Under the head "district observations" stations for the period in question during the past 12 years. The "means for the district" are the numerical averages of the rainfall returns received day to day on which at least an hundredth of an inch fell.

Statement of Rainfall in Bengal for the week ending Friday (6 p.m.), the 14th of September 1883.

Meteorological division.	District.	Station.	RAINFALL.							Total.		Total rainfall from 1st to 14th September.	Average total rainfall from 1st to 14th September.	Total rainfall since 10th May.	Average rainfall from 10th May to date.
			Saturday, 8th September.	Sunday, 9th September.	Monday, 10th September.	Tuesday, 11th September.	Wednesday, 12th September.	Thursday, 13th September.	Friday, 14th September.	Number of rainy days.	Rainfall in inch.				
ORTHA	Pooree	Pooree	0.02	0.02	0.02	0.02	0.07	0.03	0.30	5	0.54	10.23	4.81	47.35	34.00
		Khurdah	0.02	0.27	0.02	0.17	0.07	0.03	0.03	5	0.50	8.07	5.45	56.45	40.11
		Bampur	0.13	0.02	0.02	0.10	0.14	0.03	0.12	4	0.50	7.29	5.15	57.75	37.80
		False Point	0.13	0.02	0.02	0.10	0.14	0.03	0.12	4	1.27	4.78	0.36	59.39	47.23
		Hookidola	0.13	0.02	0.02	0.10	0.14	0.03	0.12	4	1.27	4.78	0.36	59.39	47.23
	Cuttack	Jagatsingapore	1.22	0.18	0.28	0.21	0.23	0.14	0.14	5	0.88	10.99	5.42	61.81	42.03
		Banki	0.01	0.11	0.41	0.21	0.23	0.14	0.14	5	0.88	10.99	5.42	61.81	42.03
		Cuttack	0.01	0.11	0.41	0.21	0.23	0.14	0.14	5	0.88	10.99	5.42	61.81	42.03
		Kendrapara	1.10	0.02	0.20	0.21	0.23	0.14	0.14	5	1.03	5.35	4.01	40.41	39.00
SOUTH-WEST BENGAL.	Balasore	Chandbali	0.71	0.02	0.13	0.02	0.02	0.03	0.03	5	0.18	3.83	4.88	53.01	37.97
		Rhuddruck	1.01	0.02	0.13	0.02	0.02	0.03	0.03	5	1.80	6.15	4.83	40.73	40.31
		Sorah	0.23	0.02	0.13	0.02	0.02	0.03	0.03	5	0.18	3.83	4.88	53.01	37.97
		Balasore	0.23	0.02	0.13	0.02	0.02	0.03	0.03	5	0.18	3.83	4.88	53.01	37.97
		Jalasore	0.20	0.02	0.13	0.02	0.02	0.03	0.03	5	0.18	3.83	4.88	53.01	37.97
	Midnapore	Haripodah	1.31	0.02	0.03	1.33	0.53	0.04	0.04	6	4.17	0.85	5.18	46.54	41.12
		Contai	0.28	0.10	0.22	0.20	0.02	0.11	0.11	6	1.05	4.23	7.17	40.37	47.83
		Saugor Island	0.44	0.77	0.45	0.27	1.14	0.54	0.54	6	3.61	8.92	6.95	53.18	40.41
		Tamluk	0.04	0.02	0.74	0.02	0.18	0.18	0.18	4	0.98	2.90	4.03	42.70	40.78
		Midnapore (Ghatia)	0.04	0.02	0.74	0.02	0.18	0.18	0.18	4	0.98	2.90	4.03	42.70	40.78
SOUTH-WEST BENGAL.	24 Pargunnahs	Diamond Harbour	0.27	0.17	1.71	0.05	0.13	0.13	0.13	5	2.53	3.51	7.07	41.05	40.50
		Alipore Jail	0.06	0.05	1.11	0.13	0.13	0.02	0.02	5	1.37	2.79	5.05	34.88	43.86
		Barraekpore	0.06	0.05	1.11	0.13	0.13	0.02	0.02	5	1.37	2.79	5.05	34.88	43.86
		Dum-Dum	0.06	0.05	1.11	0.13	0.13	0.02	0.02	5	1.37	2.79	5.05	34.88	43.86
		Barasat	0.07	0.05	0.05	0.05	0.31	0.04	0.04	4	0.88	2.00	5.12	38.00	42.00
	Howrah	Huseerhat	0.06	0.05	0.05	0.05	0.09	0.09	0.09	4	1.32	3.10	4.90	52.86	44.00
		Howrah	0.06	0.05	0.05	0.05	0.09	0.09	0.09	4	1.32	3.10	4.90	52.86	44.00
		Moheeraka	0.01	0.05	0.17	0.05	0.05	0.16	0.01	5	1.16	2.61	5.43	35.11	43.48
		Howrah	0.01	0.05	0.17	0.05	0.05	0.16	0.01	5	1.16	2.61	5.43	35.11	43.48
		Moheeraka	0.01	0.05	0.17	0.05	0.05	0.16	0.01	5	1.16	2.61	5.43	35.11	43.48
SOUTH-WEST BENGAL.	Hooghly	Serampore	0.02	0.35	0.02	0.02	0.09	0.09	0.09	4	0.48	1.23	4.50	30.15	40.53
		Hooghly	0.02	0.35	0.02	0.02	0.09	0.09	0.09	4	0.48	1.23	4.50	30.15	40.53
		Jehanabad	0.03	0.05	0.20	0.30	0.02	0.13	0.13	6	0.80	1.70	4.12	43.40	38.00
		Jehanabad	0.03	0.05	0.20	0.30	0.02	0.13	0.13	6	0.80	1.70	4.12	43.40	38.00
		Jehanabad	0.03	0.05	0.20	0.30	0.02	0.13	0.13	6	0.80	1.70	4.12	43.40	38.00
	Burdwan	Culina	0.26	0.11	0.15	0.13	0.30	0.02	0.02	5	1.24	1.67	6.35	41.01	36.37
		Burdwan	0.06	0.11	0.15	0.13	0.30	0.02	0.02	5	0.50	1.23	4.47	32.15	38.91
		Culina	0.11	0.05	0.15	0.13	0.30	0.02	0.02	5	1.24	1.67	6.35	41.01	36.37
		Banestung	0.06	0.05	0.15	0.13	0.30	0.02	0.02	5	0.50	1.23	4.47	32.15	38.91
		Banestung	0.06	0.05	0.15	0.13	0.30	0.02	0.02	5	0.50	1.23	4.47	32.15	38.91
SOUTH-WEST BENGAL.	Bankura	Bankura	0.05	0.05	0.09	0.04	0.04	0.04	0.04	4	0.63	4.72	4.53	45.00	42.10
		Bankura	0.10	0.05	0.09	0.04	0.04	0.04	0.04	4	0.73	2.44	3.20	42.14	41.03
		Malda	0.10	0.05	0.09	0.04	0.04	0.04	0.04	4	0.73	2.44	3.20	42.14	41.03
		Malda	0.10	0.05	0.09	0.04	0.04	0.04	0.04	4	0.73	2.44	3.20	42.14	41.03
		Malda	0.10	0.05	0.09	0.04	0.04	0.04	0.04	4	0.73	2.44	3.20	42.14	41.03
	Beerbhoom	Rh. Soory	0.14	0.22	0.11	0.41	0.01	0.01	0.01	5	0.80	2.74	5.82	61.75	44.23
		Helampore	0.02	0.05	0.20	0.20	0.01	0.01	0.01	4	1.14	3.54	0.33	43.68	40.31
		Helampore	0.02	0.05	0.20	0.20	0.01	0.01	0.01	4	1.14	3.54	0.33	43.68	40.31
		Helampore	0.02	0.05	0.20	0.20	0.01	0.01	0.01	4	1.14	3.54	0.33	43.68	40.31
		Helampore	0.02	0.05	0.20	0.20	0.01	0.01	0.01	4	1.14	3.54	0.33	43.68	40.31
SOUTH-WEST BENGAL.	Nuddea	Bonzong	0.20	0.02	0.33	0.35	0.24	0.02	0.02	4	0.55	1.50	4.38	36.09	42.53
		Banzong	0.20	0.02	0.33	0.35	0.24	0.02	0.02	4	0.55	1.50	4.38	36.09	42.53
		Banzong	0.20	0.02	0.33	0.35	0.24	0.02	0.02	4	0.55	1.50	4.38	36.09	42.53
		Banzong	0.20	0.02	0.33	0.35	0.24	0.02	0.02	4	0.55	1.50	4.38	36.09	42.53
		Banzong	0.20	0.02	0.33	0.35	0.24	0.02	0.02	4	0.55	1.50	4.38	36.09	42.53
	Khowlna	Satkhira	1.21	0.21	0.09	0.07	0.07	0.07	0.07	5	2.18	2.03	4.14	51.81	43.23
		Bagichat	0.20	0.21	0.09	0.07	0.07	0.07	0.07	5	2.18	2.03	4.14	51.81	43.23
		Bagichat	0.20	0.21	0.09	0.07	0.07	0.07	0.07	5	2.18	2.03	4.14	51.81	43.23
		Bagichat	0.20	0.21	0.09	0.07	0.07	0.07	0.07	5	2.18	2.03	4.14	51.81	43.23
		Bagichat	0.20	0.21	0.09	0.07	0.07	0.07	0.07	5	2.18	2.03	4.14	51.81	43.23
SOUTH-WEST BENGAL.	Jessore	Narail	0.03	0.11	0.07	0.03	0.03	0.10	0.10	1	0.11	0.10	4.08	28.02	40.51
		Jessore	0.03	0.11	0.07	0.03	0.03	0.10	0.10	1	0.11	0.10	4.08	28.02	40.51
		Jessore	0.03	0.11	0.07	0.03	0.03	0.10	0.10	1	0.11	0.10	4.08	28.02	40.51
		Jessore	0.03	0.11	0.07	0.03	0.03	0.10	0.10	1	0.11	0.10	4.08	28.02	40.51
		Jessore	0.03	0.11	0.07	0.03	0.03	0.10	0.10	1	0.11	0.10	4.08	28.02	40.51
	Moorshedabad	Kandi	0.11	0.09	0.25	0.05	0.70	0.08	2.21	4	3.20	3.09	6.36	41.07	39.00
		Rampore Haut	0.09	0.19	0.25	0.05	0.70	0.08	2.21	4	3.20	3.09	6.36	41.07	39.00
		Rampore Haut	0.09	0.19	0.25	0.05	0.70	0.08	2.21	4	3.20	3.09	6.36	41.07	39.00
		Rampore Haut	0.09	0.19	0.25	0.05	0.70	0.08	2.21	4	3.20	3.09	6.36	41.07	39.00
		Rampore Haut	0.09	0.19	0.25	0.05	0.70	0.08	2.21	4	3.20	3.09	6.36	41.07	39.00
SOUTH-WEST BENGAL.	Chittagong	Cor's Bazar	3.80	3.70	1.67	1.10	0.02	0.02	0.02	4	10.27	11.34	8.45	153.45	115.09
		Chittagong	0.51	0.10	0.97	1.19	0.02	0.02	0.02	4	2.80	4.54	7.28	92.24	107.40
		Chittagong	0.51	0.10	0.97	1.19	0.02	0.02	0.02	4	2.80	4.54	7.28	92.24	107.40
		Chittagong	0.51	0.10	0.97	1.19	0.02	0.02	0.02	4	2.80	4.54	7.28	92.24	107.40
		Chittagong	0.51	0.10	0.97	1.19	0.02	0.02	0.02	4	2.80	4.54	7.28	92.24	107.40
	Chittagong Hill Tracts.	Ransamati	0.14	0.13	0.25	0.04	0.36	0.33	0.30	7	1.48	3.85	0.82	57.56	70.31
		Ransamati	0.14	0.13	0.25	0.04	0.36	0.33	0.30	7	1.48	3.85	0.82	57.56	70.31
		Ransamati	0.14	0.13	0.25	0.04	0.36	0.33	0.30	7	1.48	3.85	0.82	57.56	70.31
		Ransamati	0.14	0.13	0.25	0.04	0.36	0.33	0.30	7	1.48	3.85	0.82	57.56	70.31
		Ransamati	0.14	0.13	0.25	0.04	0.36	0.33	0.30	7	1.48	3.85	0.82	57.56	7

Statement of Rainfall in Bengal for the week ending Friday (6 p.m.), the 14th of Sept. 1883—concluded.

Meteorological division.	District.	Station.	RAINFALL.							TOTAL.		Total rainfall from 1st to 14th September.	Average total rainfall from 1st to 14th September.	Total rainfall since 15th May.	Average rainfall from 15th May to date.
			Saturday, 8th September.	Sunday, 9th September.	Monday, 10th September.	Tuesday, 11th September.	Wednesday, 12th September.	Thursday, 13th September.	Friday, 14th September.	Number of rainy days.	Rainfall week.				
NORTH BENGAL	Pubna	Pubna	0'18	0'20	0'06			0'00		4	0'42	1'30	5'57	27'18	45'60
		Sorajunge	0'22		0'53					2	0'77	1'52	5'39	40'48	43'51
	Bogra	Sherpore		0'13	0'11	0'42				1	0'42	0'63	5'54	20'22	32'25
		Nowshilla	0'31		0'13	0'12				4	0'57	1'04	3'06	24'07	45'22
		Bogra			0'07	0'06	0'04	0'08		5	0'38	0'62	5'46	35'00	51'06
		Panchbibi		0'19		0'00	0'00			3	1'24	1'35	5'23	20'08	47'16
	Rajshahye	Beaulah	0'10	0'50	1'00	0'02	0'01	0'00		6	2'53	3'10	5'42	25'01	43'77
		Natore			0'32	0'14				2	0'46	0'95	6'00	24'77	40'03
	Maldah	Maldah	0'10	0'37	0'11	0'08	0'02			5	0'85	0'95	6'00	20'76	41'08
	Dinajpore	Mohadebpore	0'08			2'38				3	2'46	2'76	5'40	34'58	56'10
		Churamon		0'28	0'22		0'11		0'07	4	1'58	1'58	10'00	31'08	40'07
		Raigunge			0'15		0'24		0'70	3	1'22	1'71	6'34	37'76	40'69
		Dinajpore	0'05	0'03	0'06	0'03	0'10		0'34	6	0'70	0'72	6'55	38'27	53'74
		Batoorhat	0'05				0'00			2	0'77	0'77		33'96	
	Rangpore	Bhuwanigunge		0'20			1'08		0'00	3	1'37	1'37	6'77	44'45	51'52
		Rangpore			0'03		0'07	0'00	0'13	4	0'32	0'47	7'16	37'41	44'36
		Kurigram		0'04					0'12	3	0'18	0'19	6'81	34'25	45'46
		Bagaogra			0'02	0'25	0'05		3'05	4	3'07	4'28	7'08	57'08	78'26
	Julpigore	Julpigore	0'17		0'24		0'35		2'56	4	3'62	6'15	11'13	100'01	94'35
	Cooch Behar	Dinhatta	0'02	0'03	0'05		0'16		0'37	5	0'63	2'04	11'39	57'48	66'78
		Cooch Behar		0'02			0'12	0'20	0'51	4	0'86	3'11	16'71	98'53	98'53
		Mekligunge	0'33	0'03			0'07	0'00	1'52	5	3'31	4'34	8'49	85'36	93'67
		Matubhanga	0'10		0'06		0'77		2'72	4	3'05	3'77	10'09	104'17	99'13
	Darjeeling Hill.	Buxa		0'37	0'34	0'00	0'30	3'00	2'32	6	9'25	11'78	15'91	157'14	168'31
		Siliguri							0'16	1	0'16	0'62			
		Darjeeling		0'13	0'20	1'01	1'20	0'18	0'22	6	3'03	6'56	9'80	98'37	91'74
		Kalimpong			1'45	0'15			0'21	3	1'81	4'85		75'03	
NORTH BENGAL	Purneah	Kisengunge			0'20			0'29	0'33	3	0'82	0'91	7'18	52'30	58'02
		Arranah					0'18		2'63	3	4'23	4'60	7'04	53'40	53'40
		Purneah	0'00	0'01	0'05	0'18				4	0'30	1'05	10'32	30'13	53'74
	North Bhagulpore.	Madhapore	0'06					0'76		2	0'82	0'82	6'23	51'51	39'00
		Scoopool						0'34	0'43	2	0'77	0'77	6'07	38'59	41'15
	Durbhunga	Tajpore			0'07	0'07		1'31	0'58	4	2'03	2'43	3'45	40'79	32'00
		Durbhunga		0'30						1	0'30	0'30	5'05	37'00	37'24
	Mozufferpore	Madhubani									Nil	Nil	5'72	30'13	33'30
		Sitamarhi						0'02	0'75	2	0'77	0'77	3'07	31'42	33'08
		Mozufferpore	0'30	0'16				0'07		3	0'53	0'55	4'00	42'33	43'00
	Chumparun	Hajpore			0'17	0'26	0'04	0'34		4	0'81	1'30	5'35	51'42	53'00
	Sarun	Motihari						0'10		1	Nil	Nil	3'78	33'44	34'26
		Bettiah						0'10		1	0'10	0'23	3'00	30'04	30'19
		Gopalgunge						0'15	0'41	2	0'56	0'66	3'03	25'27	30'13
SOUTH BENGAL	Shahabad	Saran	0'10			0'04	0'07	0'20	0'45	5	0'92	1'75	4'13	20'78	35'05
		Chuprah					0'02	0'01	0'35	3	1'88	2'08	3'73	34'80	31'33
	Gya	Buxar					0'76	3'05		2	3'81	4'74	3'63	31'94	31'01
		Dehree						0'52	0'10	2	0'62	1'20			
		Bhuboah				0'43		1'55		2	1'80	3'42	4'16	25'40	35'12
		Sasseram	0'00				0'16	2'12	0'05	4	2'42	3'52	5'31	33'59	33'51
		Arrah	0'23	0'31			0'08	0'20	0'07	5	0'90	1'24	3'66	24'58	34'05
	Patna	Aurangabad		0'05		0'30	0'20	0'15	0'41	5	1'26	2'01	3'58	30'38	35'31
		Gya	0'11	0'17			1'20	1'43	0'25	5	3'10	3'64	3'64	43'24	36'36
		Nowadah		0'24			1'28		0'16	3	2'28	2'73	3'75	31'30	34'03
		Jehanabad					0'00	1'00	0'10	3	2'00	3'40	2'85	38'79	33'21
	Behar	Patna		0'42	0'23	0'12	0'34	0'25	0'03	6	1'30	1'78	5'60	33'40	34'03
		Dinapore		0'35	0'30	0'20	0'20	0'20	0'20	6	1'45	1'85	3'60	28'65	32'04
		Behar		0'31	0'13			0'00	0'08	4	0'58	1'32	3'35	55'84	33'11
		Barh		0'20	0'17	0'10	0'30	1'20		5	2'27	2'50	4'08	30'05	32'38
	Monghyr	Begowansi					0'28	0'51	0'50	3	1'38	1'07	3'82	43'12	32'03
		Monghyr			0'21			0'20	1'73	3	2'23	2'63	5'17	25'31	30'13
		Jamui		0'41		0'07		0'45	0'40	4	1'36	2'11	4'09	32'53	30'42
	South Bhagulpore.	Bhagulpore			0'20	0'03	0'03	0'03	0'06	4	0'41	0'85	3'67	37'63	39'18
		Banka			0'55			0'72		2	1'27	2'30	4'00	28'43	30'47
	Sonthal Pergunnah.	Rajmahal		0'17	0'00	0'09	0'51		0'50	5	1'07	1'88	7'32	24'80	43'19
		Gouda	0'16	0'58	0'10			2'27	0'31	5	3'23	4'70	4'31	31'20	37'27
		Pakour	0'50	0'24	0'03	0'10		0'31	0'29	7	3'04	5'39	5'00	44'29	62'17
		Nya Doonka	0'05	0'32	0'22	0'09		0'04	0'02	6	0'74	1'35	6'00	43'01	44'07
		De gnur	0'09	0'05				0'42	0'32	4	1'08	1'34	5'10	37'55	40'30
CHUTTA NAGPUR.	Hasaribagh	Jamtara	0'34	0'15	0'34	0'25			0'27	5	1'10	2'76	2'71	30'67	40'16
		Pachamba	0'40	0'50	0'05	0'09		0'03	1'00	6	3'10	4'72	5'03	33'13	40'30
		Hasaribagh	0'11	0'01	1'00	0'08		1'04	0'08	6	3'31	5'43	4'90	40'16	30'43
		Sontagurn		1'38	0'10		0'03	0'75		4	3'08	5'89	3'55	34'01	40'57
	Lohardugga	Asuhdi Hills	0'52	0'15	0'25	0'10	0'20	1'10	0'10	7	2'42		3'18		41'53
		Ranchi	0'34	0'24	0'55	1'00				4	2'94	4'81	5'20	52'00	43'00
	Singbhoom	Palamow		0'54	0'58		1'45	0'05	0'50	5	3'40	4'83	4'43	23'72	30'74
		Chyobasa	0'32	0'74	1'12	0'34				4	2'52	4'53	5'54	47'79	44'79
Mauaboom	Mauaboom	Purulia	0'07	0'80	0'11	0'47			0'00	5	1'04	4'02	4'55	52'03	40'78
		Gobindpore		0'21		1'03	0'34			3	2'17	3'56	4'09	31'25	40'83

Explanation—Indicates that no rain has fallen. If the return for any day has not been received, the corresponding space is left blank. If some of the returns are wanting, the corresponding spaces in the total rainfall columns are left blank.

SUMMARY OF THE METEOROLOGICAL AND RAINFALL OBSERVATIONS TAKEN IN BENGAL FOR THE WEEK ENDING FRIDAY, THE 14TH SEPTEMBER 1883.

It was noticed in the report for the week ending the 7th of September, that on the morning of that date a small barometric depression or cyclonic vortex, which had been forming for some days in the north-west angle of the Bay, was approaching the coast of Orissa. Its centre was on that morning between Balasore and False Point, and not far distant from the coast, and during the same night the small depression passed inland into Orissa, where it afterwards apparently filled up and disappeared. With the advance of the depression inland, the barometer rose rapidly at the head of the Bay, and moderately strong monsoon winds began to blow in all districts bringing with them light to moderate rain. The rainfall on Saturday, the 8th instant, was general in Orissa, South-West Bengal and Chutia Nagpur; on the 9th instant it had extended to South Behar, and on the 10th instant rain was general over the whole Province. During this period pressure, which had been for some period considerably below the normal, was gradually increasing in all districts, and the increase continued until the close of the week, when pressure was about equal to the normal. With the gradually increasing pressure, the monsoon winds began to slacken somewhat, and at the close of the week a more or less pronounced break in the rains had commenced in Orissa, South-West Bengal and East Bengal, though rain had continued to fall, and in many cases in considerable amounts, in Behar and North Bengal. With the gradually increasing pressure, and with, in some cases, the rather variable nature of the barometric changes, wind directions have not been so steady as they were in previous weeks, and especially towards the close of the week wind directions in Behar and Northern Bengal had become very variable. Notwithstanding this want of steadiness of direction, wind velocities are keeping quite equal to the normal for the period, and in some cases they even are above normal velocity. This will be clearly seen from the following tabular statement:—

STATION.	Daily wind velocity in week ending 14th September 1883.	Normal daily wind velocity in September.	STATION.	Daily wind velocity in week ending 14th September 1883.	Normal daily wind velocity in September.
	Miles.	Miles.		Miles.	Miles.
False Point ...	240	174.6	Chittagong ...	158	108.0
Cuttack ...	62	56.9	Dacca ...	113	114.1
Saugor Island ...	25.0	22.8	Gya ...	48	54.5
Calcutta ...	106	116.9	Patna ...	141	65.8
Burdwan ...	86	76.8	Purneah ...	34	60.0
Berhampore ...	83	85.4	Durbhanga ...	117	88.0
Jessore ...	117	79.0	Hazaribagh ...	171	167.8

As pointed out before, pressure in all districts was at the commencement of the week considerably below the normal, and there has since been a gradual recovery till at its close pressure was nearly normal. It therefore of course follows that the average pressure for the week will be below the normal in almost all instances. The numbers given in the meteorological table show that the only station which has had an average pressure for the week above the normal is Durbhanga, which registers 0.012" in excess. In all other cases pressure has been below the normal by amounts which equal in the average .04" in Orissa and South-West Bengal, .015" in East Bengal, .05" in Chutia Nagpur, and .06" in South Behar. The largest defect is at Gya, which reports a pressure below the normal by .073". Temperature has varied considerably during the week, and the variations have to a great extent followed the course of the rainfall. It was thus at the commencement of the week below the normal in Orissa and South-West Bengal, and above it in Behar, which was not then receiving any rain, but at the close of the week the reverse condition of things held, and temperature was below the normal in Behar, where rain was falling, and above the average in Orissa and South-West Bengal, which were then comparatively rainless. The variations of the averages for the week from the normal have not therefore been very large, and the only case when a variation of more than one degree occurs is at Chittagong, which shows a defect of 2°. The variations of the temperatures of different stations in the same district are also in many cases of opposite character, so that it may be said that in the whole there has been a nearly normal temperature on the whole province during the past week.

The following table gives the usual summary of the temperature and rainfall data for each of the seven meteorological divisions of the Province.

METEOROLOGICAL DISTRICT.		TEMPERATURE.						RAINFALL.									
		Highest observed during week.	Lowest observed during week.	Average for week.			Average mean of week above or below normal mean week.	Of week.			Rainy days.			Since 1st of month.		Since May 15th.	
				Of highest of each day.	Of lowest of each day.	Of mean for each day.		Average.	Normal average.	Variation.	Average number in week.	Normal average num- ber.	Variation.	Average.	Normal average.	Average.	Normal average.
Orissa	...	92.4	76.0	80.7	78.8	82.8	-1.0	1.06	2.88	-1.82	3.3	3.9	-0.6	6.30	40.27	49.80	5.20
South-West Bengal	...	92.0	75.0	84.6	78.4	83.3	-0.1	1.36	2.41	-1.05	3.0	3.8	+0.1	2.71	42.38	41.08	4.99
East Bengal	...	91.3	74.0	80.0	77.7	81.0	-0.8	2.05	2.96	-0.90	4.3	4.0	+0.3	3.50	64.73	51.86	6.34
North Bengal	...	91.8	75.1	80.5	77.0	83.0		1.46	3.47	-2.01	3.8	3.1	+0.7	2.00	65.43	49.40	7.19
North Behar	...	94.0	73.8	80.8	78.7	84.3	+0.9	0.93	1.41	-1.48	2.4	2.7	-0.3	1.14	37.00	30.35	5.14
South Behar	...	93.0	74.3	80.0	77.0	83.0	-0.2	1.94	2.03	-0.21	4.3	3.0	+1.3	2.59	37.46	32.05	4.14
Chutia Nagpur	...	85.4	69.0	82.8	71.7	77.2	-0.4	2.73	2.61	+0.32	6.0	4.1	+0.8	5.24	42.46	40.62	4.56

It has been shown previously that the velocity of the winds blowing over the province has been quite up to the normal during the past week, and yet this has been again a period of deficient rainfall in all divisions except one. The deficiency of rainfall has not, however, been quite so extreme as that registered in some divisions during the previous week, though speaking with reference to the whole province, it may be said to have received a rainfall only equal to about two-thirds of the normal. The one meteorological division, which has received an excess fall during the past week has been Chutia Nagpur, which reports an amount equal to 13 per cent above the normal fall. South Behar stands next, having received about nine-tenths of its usual fall; while East Bengal reports a rainfall equal to 70 per cent. of the average, and South-West Bengal an amount equal to 56 per cent. of the normal fall. Orissa, North Behar, and North Bengal are very considerably in defect, having only received about one-third of the normal fall, the exact amounts being 37, 39, and 42 per cent., respectively of the normal fall. Of these three, North Bengal and North Behar are very largely in defect in the previous week, though Orissa during that period had received excessive rain. It is, however, very remarkable that notwithstanding the marked defect of rain in nearly all divisions, the number of rainy days has been in excess of the normal in all cases except two, where slight defects only are shown. North Bengal is a prominent instance of this; the average rainfall at all the stations in this division for the week is 1.46 inches, while the normal fall for the same period is 3.47 inches, giving a defect during the week of 58 per cent.; the actual average number of rainy days at the stations in this division during the week has been 3.8, as against the normal number 3.1, giving an excess number of 0.7 rainy days in a year when the rainfall has been so largely in defect, South-West Bengal, East Bengal, and South Behar are instances of similar nature during this week, but not of so prominent a character. The conclusion from this seems unavoidable, that though the rain showers have been quite as numerous as usual, they have been wanting in intensity or in the amount of rain which they were able to yield. This taken in connection with the fact that the wind velocity for the period is fully up to the normal, naturally suggests that the monsoon current may be rather wanting in depth or volume during the present season.

In the various divisions, as may be expected, there are individual cases of districts receiving comparatively large excess falls or large defects which are deserving of notice. In the Orissa division the Pooree district is more largely in defect than the remaining districts. In South-West Bengal the Midnapore district has received a fall only about one-fifth of the normal, while Tumlook in this district has received actually no rain at all, and Ghatal less than a tenth of an inch of rain during the week. In Eastern Bengal the Chittagong district has received a large excess, in fact almost twice its normal amount, while the Furreedpore district and most stations in the Mymensingh district are in large defect. In North Bengal the districts of Bogra and Pubna, Rajshahye, Dinajepur, and Rungpur were in very considerable defect, while the Darjiling district received an excess fall. In North Bengal, North Bhagulpore, Champaran, and some stations in Darbhanga are in very large defect. In connection with this district, it may be remarked that a report from Mozufferpore was telegraphed to Simla to the effect that 9 inches of rain had fallen there on the 9th instant, but it has been since found that the actual amount of rain which was received on that day was only 0.3 inch. In South Behar and in Chutia Nagpur rainfall has been fairly evenly distributed, and there are no exceptional cases which call for special remark.

Saturday, 8th September.—Pressure increased in all districts, except South Behar and Chutia Nagpur. The increase of pressure was especially large in Orissa, and at False Point and Bolasore it amounted to more than a tenth of an inch. This was clearly due to the inland advance of the barometric depression which had existed in the North-West angle of the Bay for the previous three days. Pressure, however, continued very much below the normal, the defect varying from 0.16 inches at Cuttack to 0.06 inches at Chittagong.

Temperature fell considerably in Orissa, and to a smaller extent in South-West and East Bengal and in Chutia Nagpur, but in Behar it continued to rise. It averaged nearly 4° below the normal in Orissa, while in Behar it was 3° above the normal. With the advance of the barometric depression inland, wind directions became south-westerly in Orissa and at Sangor Island. In all other parts of the Province south-easterly or easterly winds of moderate strength were blowing. In Orissa, Chutia Nagpur, and South-West Bengal, wind velocities had increased since the 7th instant. Humidity was fairly high in all districts. The amount of cloud was also high in all districts, except Behar and North Bengal. General rain light to moderate in amount fell in Orissa, South-West Bengal, East Bengal and Chutia Nagpur. A few showers fell in North Bengal and North Behar, and in the Sonthal Pergunnahs district of South Behar; but the remaining districts of this division were rainless. The heaviest rain fell in East and South-West Bengal and Orissa. Thus Cox's Bazar reported 3.8 inches, Noakhally 2.29 inches, Ranaghat 1.60 inches, Berhampore 1.27 inches, Satkhira 1.21 inches, Banki 1.22 inches, Tajpore 1.10 inches, and Sarah 1.01 inches.

Sunday, 9th September.—Pressure increased at almost all the reporting stations. The increase was largest in Behar and in North Bengal, where pressure was relatively high. Notwithstanding the increase of pressure, the barometer was lower than the normal by amounts which averaged nearly a tenth of an inch in South-West Bengal and Orissa, but which were only equal to a few hundredths of an inch in East Bengal. The changes of temperature were small and variable. It was generally increasing in Orissa and South-West Bengal, and decreasing in Behar and North Bengal. It was, however, distinctly below the normal in Orissa, South-West and East Bengal, and above the normal in Behar. Fairly strong south-westerly winds were blowing in Orissa. In other districts the wind directions were generally south-easterly and easterly, and winds were of full average strength. Humidity increased at most stations, the increase being rather marked in Behar. Cloud proportion was high, except at some stations in Behar and North Bengal. Rainfall was rather more general to-day, though the amounts reported were usually small. Rain had extended to most stations in South Behar, though in North Bengal and North Behar rainfall was rather scanty. The heaviest rain fell in East Bengal, where Cox's Bazar received 3.70 inches, Perozepore 1.75 inches, Bhola 1.55 inches, Patuakhally 1.82 inches, and Noakhally 1.30 inches; Bagihat also recorded 2.38 inches, Hooghly 1.47 inches, Semtaghur (Hazaribagh) 1.38 inches, and Rampore Haut 1.19 inches.

Monday, 10th September.—Pressure continued to increase by small amounts over the whole Province. With this further increase, pressure was above the normal in East Bengal and North Behar, though in the western and southern districts it was still below the normal. In Orissa, South Behar, and Chutia Nagpur pressure was relatively low to the other parts of the Province. The temperature changes were decidedly variable, even when neighbouring stations were considered. Temperature continued generally below the average in East and South-West Bengal, and in Orissa, but was above the normal in Behar. Winds had not changed much in direction during the past 24 hours, but velocities in most instances decreased slightly. Moderately strong south-easterly winds still continued to prevail over the greater part of the reporting area. Humidity increased in South-West Bengal and in Orissa, but in North Bengal and Behar it was rather smaller. Cloud proportion was distinctly smaller in Orissa and at some stations in North Behar, but elsewhere the changes were not marked. General rain, light to moderate in amount, again fell in all divisions, though a few stations in Behar were rainless. Rain was comparatively heavy in Chutia Nagpur and at some stations in South-West, East and North Bengal, but it was not so heavy as in the previous two days. The following stations reported amounts in excess of one inch:—Chyebassa, Hazaribagh, Kalimpong, Rampore Beaulah, Cox's Bazar, Alipore and Diamond Harbour.

Tuesday, 11th September.—The changes of pressure were a little irregular, though the amounts were small. The barometer was on the whole falling, especially in South Behar and Chutia Nagpur. These two areas still showed a low pressure in comparison with the remaining districts. Pressure was, however, below the normal by small amounts in all districts, except in East Bengal and North Behar. Temperature had increased in Orissa, but elsewhere the changes were not very marked. Temperature was below the normal in Orissa, Chutia Nagpur and in East and South-West Bengal, though it was above it in Behar. Winds became decidedly more southerly during the past 24 hours in almost all districts. Wind velocities, however, were diminishing slightly, especially at the southern stations. Humidity decreased decidedly in Orissa, but in other districts the changes were small. The amount of cloud was distinctly smaller in Orissa and at some stations in South-West Bengal, while in Behar it appeared to be increasing. Rain was less general to-day, and in most districts it was lighter than on the 10th. Very light showers only fell in Orissa, in South-West Bengal, and in most districts of North Bengal and of Behar, though comparatively heavy rain fell in some districts of Chutia Nagpur, East Bengal and North Bengal. Thus Mahadebpore (Dinagepore) reported 2.38 inches, Ranchi 1.80 inches, Govindpore 1.62 inches, Chittagong 1.19 inches, Cox's Bazar 1.1 inches and Darjeeling 1.01 inches.

Wednesday, 12th September.—The changes of pressure were again a little irregular, though the amounts were small. Pressure continued to fall in most districts, except in Orissa, and it was below the normal generally by small amounts. Behar and Chutia Nagpur still showed a relatively low pressure. Temperature continued to increase at almost all stations.

It was above the normal at nearly all the reporting stations, the excess temperature averaging about 1° . Winds became decidedly more irregular, and northerly winds, and in some cases calms were reported from some of the stations in Behar. In the majority of cases wind velocities had very materially diminished, and light winds now prevailed over the Province. Humidity decreased in almost all districts except Behar, but in South Behar specially humidity increased. Cloud proportion, though high in South-West Bengal, was in other districts moderate only. Rain was now comparatively scarce in the southern divisions, while it was general and fairly heavy in North Bengal and in South Behar, and in some parts of Chutia Nagpur and East Bengal. Mymensing reported the largest amount of 2.76 inches, while the following stations received amounts in excess of one inch:—Nowadah, Gya, Pakoor, Darjeeling, and Bhowanigunge.

Rainfall was scanty in Orissa, South-West, East, and North Bengal, though in one or two instances stations in these divisions received heavy rain. Rainfall was, however, fairly general in North and South Behar, and in Chutia Nagpur, and from many stations very heavy rain was reported. The following stations received more than three inches of rain, Buxar and Buxa; the following amounts between two and three inches, Godda, Sasseram Arrareah, and Chandpore, and the following more than one inch, Mahudi Hills, Hazaribagh, Barrh, Jehanabad, Gya, Bhuboah, Tappore, Penny, Rampore Haut, and Kooshtea.

Thursday, 13th September.—Pressure commenced to increase at all stations. The increase was largest in North Bengal and Behar, while it was comparatively small in Orissa and at most stations in South-West Bengal. Pressure was generally above the normal, except in Behar and at a few stations in South-West Bengal. Temperature again increased considerably in Orissa and in South-West and East Bengal. It was stationary in North Bengal and in Chutia Nagpur, and it fell at most stations in Behar. Temperature was generally above the average in all districts except in Behar. Winds continued rather irregular in most districts this morning. In Behar calms were reported from four stations, while at the other stations the wind directions were very variable. Wind velocities again became smaller at most stations, and very light winds prevailed everywhere, except at the sea-coast stations. Humidity decreased still further in South-West Bengal and Orissa, but it increased in Behar. Cloud proportion was small in the southern districts, but had increased considerably in Behar.

Most districts of South-West Bengal and Orissa continued practically rainless; in East Bengal, North Behar, and Chutia Nagpur a few light local showers are reported, while in South Behar and over the greater part of North Bengal rainfall was more general, and in many cases considerable amounts were reported. Bagdogra received 3.05 inches, Julpigori 2.86 inches, Matabhanga 2.72 inches, Buxa 2.32 inches, Kandi (Moorshedabad) 2.21 inches, Monghyr 1.73 inches, Mickligunge 1.52 inches, Arrareah 1.12 inches, and Pachamba 1 inch.

Friday, 14th September.—The changes of pressure were decidedly irregular, though small in most instances. Generally pressure was increasing at the eastern reporting stations, and decreasing at the western stations. Pressure was below the normal by small amounts at nearly all stations. Temperature increased rapidly in Orissa and in South-West Bengal, but in other districts the changes were not so marked. Temperature was considerably above the average by amounts varying from two to three degrees in South-West Bengal and Orissa, but was distinctly below the normal in South Behar and Chutia Nagpur. Winds were again rather more southerly. Wind velocities continued moderate in all districts, but in Behar they appeared again to be slightly increasing. Humidity continued high in Chutia Nagpur, in Behar and in North Bengal, but in Orissa and South-West Bengal it was comparatively small for the season. The amount of cloud remained rather high in Chutia Nagpur and Behar, though in the southern divisions it was moderate only.

METEOROLOGICAL OFFICE, BENGAL.

The 18th September 1883.

ALEXANDER PEDLER, F.C.S.,

Offg. Meteorological Reporter to the Govt. of Bengal.

MEMORANDA ON THE MORTUARY STATISTICS OF THE DISTRICTS IN BENGAL FOR THE MONTH OF JULY 1883.

1. The returns from the districts in Bengal disclose that during the month of July 1883 there were registered in them 91,145 deaths, representing an annual ratio per 1,000 of their population amounting to 66,162,926, of 16.44 against 15.00 per 1,000 in the preceding month, and 19.44 per 1,000 in the corresponding month of 1882.

2. From the same returns it is seen that the highest casualty rates were returned from the under-mentioned districts:—

	Ratio per mille.		Ratio per mille.
Gya	38.52	Rajshahye	24.24
Shahabad	29.88	Poori	23.52
Patna	28.08	Bogra	22.80
Julpaiguri	24.96	Burdwan	20.52
Darjiling	24.72		

3. A review of the figures representing the mortality from the principal death-causes denotes that, cholera caused the deaths of 1.56 per 1,000 of the population of the districts, as opposed to 2.04 per 1,000 during the preceding month, indicating a diminution in the ravages of this scourge; that fever removed 11.04 per 1,000 against 9.84 per 1,000, showing a rise in mortality from this general cause of death; and that small-pox, bowel-complaints, injury and "Other Causes" resulted in loss of life to the following extent:—

Small-pox	...	...	...	12	against	12
Bowel-complaints	...	...	...	72	"	60
Injury	...	...	...	60	"	48
Other causes	...	...	...	2.04	"	1.68

4. Referring to the local distribution of the above-mentioned diseases, it is observed that their severest activity was displayed in the following districts:—

<i>Cholera.</i>		<i>Small-pox.</i>		<i>Fever.</i>	
	Ratio per mille.		Ratio per mille.		Ratio per mille.
Gya	... 16.68	Poori	... 46	Rajshahye	... 22.80
Julpaiguri	... 11.76	Chumparun	... 72	Bogra	... 20.04
Shahabad	... 10.80	Murshidabad	... 48	Gya	... 17.16
Darjiling	... 10.20			Burdwan	... 16.20
Poori	... 4.20			Nuddea	... 15.60
Patna	... 2.88			Shahabad	... 15.48
Balasore	... 1.92			Patna	... 15.00
Hazaribagh	... 1.92				
Cuttack	... 1.80				
Lohardugga	... 1.56				
Rungpore	... 1.44				
Mozufferpore	... 1.44				
Midnapore	... .96				

<i>Bowel-complaints.</i>		<i>Other Causes.</i>	
	Ratio per mille.		Ratio per mille.
Darjiling	... 5.28	Poori	... 9.72
Balasore	... 4.08	Sarun	... 5.88
Poori	... 3.24	Patna	... 5.76
Patna	... 3.12	Balasore	... 4.68
		Cuttack	... 4.32

5. Distributed under the heads of *Sex*, *Class* and *Age*, the mortality of the month under review stands as follows:—

According to Sex.		According to Class.		According to Age.	
	Ratio per mille.		Ratio per mille.		Ratio per mille.
Males	18.36	Christians	13.20	Under 1 year	15.40
Females	14.64	Hindus	17.28	1 and under 5 years	19.08
		Mahomedans	14.88	5 and under 10	9.72
		Budhists	13.08	10 and under 15	8.52
		Other classes	15.96	15 and under 20	11.76
				20 and under 30	11.88
				30 and under 40	12.96
				40 and under 50	16.56
				50 and under 60	22.56
				60 years and upwards	35.00

F. W. A. DEFABECK,

Offg. Sanitary Commissioner for Bengal.

The 17th September 1883.

Statement showing the Results of the Registration of Deaths in the Districts in Bengal for the month of July 1883.

DIVISIONS.	DISTRICTS.	POPULATION.		DEATHS FROM—										RATIO PER 1,000 OF POPULATION PER ANNUM.		COMPARISON WITH PREVIOUS PERIODS.		DEATHS AMONG—		RATIO PER 1,000 OF POPULATION PER ANNUM.		Ratio of male deaths to every 100 female deaths.	
		Males.	Females.	Total.	Cholera.	Small-pox.	Typhoid.	Bowel-complaints.	Injury.	Other diseases.	All causes.	Cholera.	Small-pox.	Typhoid.	Bowel-complaints.	Injury.	Other diseases.	All causes.	Ratio of deaths per 1,000 of population in the corresponding month of the previous year.	Males.	Females.		
Burdwan	Burdwan	684,203	294,585	1,000,823	98	10	10	10	40	49	306	184	102	16	2	36	252	21.76	1,242	1,111	22.50	184	
	Bankura	207,131	93,616	300,747	10	10	10	10	40	49	306	184	102	16	2	36	252	21.76	1,242	1,111	22.50	184	
	Medinipur	381,553	161,507	543,060	10	10	10	10	40	49	306	184	102	16	2	36	252	21.76	1,242	1,111	22.50	184	
	Hooghly	1,344,374	517,597	1,861,971	214	21	21	21	87	117	317	387	102	11	1	48	1,000	13.96	1,744	1,501	18.96	118	
PRESDIDNEY.	Howrah	174,896	77,297	252,193	15	1	1	1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Howrah	316,479	131,092	447,571	40	4	4	4	15	15	108	108	108	108	108	108	108	108	108	108	108	108	108
	Howrah	316,479	131,092	447,571	40	4	4	4	15	15	108	108	108	108	108	108	108	108	108	108	108	108	108
	Howrah	316,479	131,092	447,571	40	4	4	4	15	15	108	108	108	108	108	108	108	108	108	108	108	108	108
RAJSHAHY AND COCHIN BHAIR.	Dinapore	782,352	782,352	1,564,704	57	1	1	1	45	45	47	36	101	12	1	12	72	11.75	712	696	13.69	1392	
	Dinapore	782,352	782,352	1,564,704	57	1	1	1	45	45	47	36	101	12	1	12	72	11.75	712	696	13.69	1392	
	Dinapore	782,352	782,352	1,564,704	57	1	1	1	45	45	47	36	101	12	1	12	72	11.75	712	696	13.69	1392	
	Dinapore	782,352	782,352	1,564,704	57	1	1	1	45	45	47	36	101	12	1	12	72	11.75	712	696	13.69	1392	
Dacca.	Dacca	1,083,603	469,892	1,553,495	22	5	5	5	100	100	468	224	102	8	2	24	1,272	10.56	1,200	974	18.04	124	
	Dacca	1,083,603	469,892	1,553,495	22	5	5	5	100	100	468	224	102	8	2	24	1,272	10.56	1,200	974	18.04	124	
	Dacca	1,083,603	469,892	1,553,495	22	5	5	5	100	100	468	224	102	8	2	24	1,272	10.56	1,200	974	18.04	124	
	Dacca	1,083,603	469,892	1,553,495	22	5	5	5	100	100	468	224	102	8	2	24	1,272	10.56	1,200	974	18.04	124	
CHITTAGONG.	Chittagong	331,610	109,892	441,502	10	1	1	1	40	40	127	104	101	10	1	10	127	13.78	702	570	18.84	121	
	Chittagong	331,610	109,892	441,502	10	1	1	1	40	40	127	104	101	10	1	10	127	13.78	702	570	18.84	121	
	Chittagong	331,610	109,892	441,502	10	1	1	1	40	40	127	104	101	10	1	10	127	13.78	702	570	18.84	121	
	Chittagong	331,610	109,892	441,502	10	1	1	1	40	40	127	104	101	10	1	10	127	13.78	702	570	18.84	121	
PATNA.	Patna	608,783	269,673	878,456	624	35	35	35	133	133	854	426	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Patna	608,783	269,673	878,456	624	35	35	35	133	133	854	426	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Patna	608,783	269,673	878,456	624	35	35	35	133	133	854	426	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Patna	608,783	269,673	878,456	624	35	35	35	133	133	854	426	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
BEAGTPORE.	Beagtpore	808,126	367,609	1,175,735	144	30	30	30	117	117	684	342	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Beagtpore	808,126	367,609	1,175,735	144	30	30	30	117	117	684	342	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Beagtpore	808,126	367,609	1,175,735	144	30	30	30	117	117	684	342	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Beagtpore	808,126	367,609	1,175,735	144	30	30	30	117	117	684	342	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
ORISSA.	Orissa	917,835	414,519	1,332,354	23	7	7	7	43	43	144	72	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Orissa	917,835	414,519	1,332,354	23	7	7	7	43	43	144	72	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Orissa	917,835	414,519	1,332,354	23	7	7	7	43	43	144	72	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Orissa	917,835	414,519	1,332,354	23	7	7	7	43	43	144	72	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
CHOTA NAGPORE.	Chota Nagpore	280,978	121,401	402,379	176	11	11	11	10	10	95	48	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Chota Nagpore	280,978	121,401	402,379	176	11	11	11	10	10	95	48	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Chota Nagpore	280,978	121,401	402,379	176	11	11	11	10	10	95	48	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
	Chota Nagpore	280,978	121,401	402,379	176	11	11	11	10	10	95	48	102	12	2	24	1,272	14.64	1,200	974	18.04	124	
TOTAL FOR THE PROVINCE.		32,831,766	13,331,106	46,162,872	7,048	724	724	724	3,070	3,070	11,713	91,115	1,042	11,713	1,042	724	11,713	15.00	50,309	40,900	12.36	124	

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F. W. A. DEFABECK, JR.
Offg. Sanitary Commissioner for Bernal.

OFFICE OF SANITARY COMMISSIONER FOR BENGAL,

MEMORANDA ON THE VITAL STATISTICS OF THE MUNICIPALITIES IN
BENGAL FOR THE WEEK ENDING 1st SEPTEMBER 1883.

The birth and death returns of the first class Municipalities in Bengal yield the following results for the week ending 1st September 1883:—

(1). The ratios per mille of births and deaths for the period above referred to stand at—births 23.0 and deaths 31.6,—the corresponding figures of the preceding week ending 25th August being 24.7 and 32.8 respectively.

(2). The highest proportions of births and deaths were returned from—

Births.			Deaths.		
		Ratio per mille.			Ratio per mille.
Darjiling	..	66.7	Gya	..	75.2
Bhagulpore	..	48.0	Monghyr	..	64.2
Arrah	..	43.1	Burdwan	..	53.4
Chuprah	..	38.1	Hughli	..	37.3
Patna	..	37.3	Patna	..	37.0
Santipore	..	30.2	Chuprah	..	34.2
Serampore	..	29.4	Bhagulpore	..	32.6
			Rampore Beaulah	..	31.5
			Suburbs of Calcutta	..	31.0
			Santipore	..	30.2
			Poori	..	30.0
			Darjiling	..	29.6
			Naraingunge	..	29.0

(3). The following figures represent the rates of mortality from the principal diseases under record during the week under review, contrasted with similar information for the preceding week:—

			Ratio per mille during the weeks ending—	
			1st September.	25th August.
Cholera	..	..	2.6	2.8
Small-pox	..	..	0.3	.2
Fevers	..	..	14.9	16.0
Bowel-complaints	..	..	5.1	5.5
Injury	..	..	.6	.6
Other causes	..	..	8.4	7.7

indicating a diminution of fatal results from all the death-causes except from the unspecified diseases recorded under the head of "Other causes," the mortality from which is higher; and from injury, the casualties from which exhibit no variation.

(4). Of the diseases mentioned in the foregoing table, cholera, fever and bowel-complaints are reported to have been notably fatal in the following Municipalities:—

Cholera.		Fever.		Bowel-complaints.	
	Ratio per mille.		Ratio per mille.		Ratio per mille.
Monghyr	.. 19.9	Burdwan	.. 36.6	Naraingunge	.. 16.6
Gya	.. 8.9	Monghyr	.. 30.7	Gya	.. 15.7
Chuprah	.. 8.8	Santipore	.. 30.2	Chuprah	.. 8.8
		Gya	.. 29.4	Monghyr	.. 8.1
		Rampore Beaulah	.. 28.9		
		Chittagong	.. 25.9		

Small-pox appears to have prevailed this week only in the Bhagulpore town, and that to a very small extent.

(5). Under the heads of Sex, Class and Age the casualties rates stand as follows:—

According to Sex.

According to Class.

According to Age.

		Ratio per mille.			Ratio per mille.			Ratio per mille.
Males	..	30.6	Christians	..	42.5	Under 1 year	..	251.1
Females	..	32.7	Hindus	..	31.8	1 and under 5 years	..	59.5
			Mahomedans	..	30.9	5 and under 10	..	21.7
			Budhists	..	48.4	10 and under 15	..	15.8
						15 and under 20	..	26.6
						20 and under 30	..	18.5
						30 and under 40	..	19.6
						40 and under 50	..	19.3
						50 and under 60	..	38.9
						60 years and upwards	..	50.5

F. W. A. DEFABECK,

The 17th September 1883.

Officiating Sanitary Commissioner for Bengal.

Statement showing the Results of the Registration of Births and Deaths in the First Class Municipalities in Bengal during the week ending 1st September 1883.

DISTRICTS.		NAMES OF MUNICIPALITIES.		POPULATION.		BIRTHS.				MORTALITY ACCORDING TO—												SEX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
				NUMBER.		RATIO PER 1,000 OF POPULATION PER ANNUM.		RATIO OF MALE BIRTHS TO EVERY 100 FEMALE BIRTHS.		DEATHS FROM—						RATIO PER 1,000 OF POPULATION PER ANNUM.								COMPARISON WITH PREVIOUS PERIODS.		DEATHS.		RATIO PER 1,000 OF POPULATION PER ANNUM.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
				Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Cholera.	Small-pox.	Fever.	Bowel-complaints.	Injury.	Other causes.	All causes.	Cholera.	Small-pox.			Fever.	Bowel-complaints.	Injury.	Other diseases.	All causes.	Ratio of deaths per 1,000 of population in the previous week.	Ratio of deaths per 1,000 of population in the corresponding week of the previous year.	Males.	Females.	Ratio of male deaths to every 100 female deaths.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Burdwan	...	18,063	10,017	28,080	16	15	15	27	12	12	27	125	...	26	8	...	8	25	...	30	6	4	...	12	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13

MORTALITY ACCORDING TO—

[illegible]

OFFICE OF SANITARY COMMISSIONER FOR BENGAL,
The 17th September 1883.

F. W. A. DEFAVECK,
Offy Sanitary Commissioner for Bengal.

**Results of the Thermometrical Observations taken at the Meteorological Office,
Chowringhee, from 9th to 15th September 1883.**

MONTH.	Date.	TEMPERATURE.				HYGROMETRY.				Rain.
		Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	
1883.		°	°	°	°	°	Inches.	°	%	Inches.
September	9th	80.0	85.7	7.9	77.8	78.2	.942	77.4	99	0.02
"	10th	80.8	87.2	10.4	76.8	78.6	.956	77.0	92	1.15
"	11th	83.9	90.8	11.3	79.2	79.7	.900	78.0	83	Nil
"	12th	81.0	88.0	8.9	79.1	79.4	.976	78.5	90	0.20
"	13th	83.6	91.1	11.3	79.8	80.8	1.016	79.7	88	Nil
"	14th	84.0	91.3	10.3	81.0	81.0	1.019	79.8	87	
"	15th	83.3	87.8	7.7	80.1	80.3	.988	78.9	85	0.12

The mean temperature of the seven days ... 82.4

The extreme variation of temperature during the seven days ... 14.5

The maximum temperature during the seven days ... 91.3

The mean relative humidity during the seven days ... 88%

The total fall of rain from 9th to 15th September 1883 ... 1.49 inches.

The mean temperature and humidity are obtained by applying to the mean of the 10h, 16h, and minimum readings a correction dependent on the range, and derived from the hourly observations at the Surveyor-General's Office, Chowringhee, in past years.

METEOROLOGICAL OFFICE, INDIA,
The 17th September 1883.

ALEXANDER PEDLER,
Offg. Meteorological Reporter to the Govt. of India.

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, BENGAL.

Statements shewing the total amount of Traffic and Tolls on the Canals for the month of July 1883.

ORISSA CIRCLE.

Ta/dundah Canal.

LENGTH OF CANAL OPEN—27½ MILES.

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS.		Tonnage.	Tollage.	Rate of toll per ton-mile
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			

LOCAL TRAFFIC.

(1)—PRIVATE.

ARTICLES OF FOOD.		Mds.	Rs.				Rs.	A.	P.
2	Paddy	727	225	620	33	60	4	0	7
1	Rice	55	100	110	4	100	1	1	8
9	Jaggery	2,733	13,001	3,083	131	3,267	30	10	4
1	Dry mangoes	335	670	600	18	270	3	7	0
1	Mustard	335	1,005	600	18	342	5	0	0
BUILDING MATERIALS.									
24	Rubble	7,940	892	14,253	509	3,563	75	12	0
FUEL.									
1	Fuel	16	3	24	1	25	0	4	0
MISCELLANEOUS.									
70	Passenger boats			29,510	1,034	8,102	140	9	0
40	Empty do			12,401	433	4,330	34	5	9
44	Passengers (3,462 in number)						18	13	6
164	Total	12,152	16,470	61,905	2,311	15,245	329	9	10
93	Total of same month last year	7,232	9,675	44,075	1,600	8,063	247	4	10

(2)—STORES AND MATERIALS FOR IRRIGATION WORKS.

BUILDING MATERIALS.		Mds.	Rs.				Rs.	A.	P.
	Nil.								
MISCELLANEOUS.									
	Nil.								
	Total								
8	Total of same month last year	1,000	60	4,300	153	400	10	11	7

ABSTRACT.

	Mds.	Rs.				Rs.	A.	P.
164	Private, including miscellaneous	12,152	16,470	61,905	2,311	15,245	329	9 10
...	Government stores, including miscellaneous							
164	Grand Total	12,152	16,470	61,905	2,311	15,245	329	9 10
163	Grand Total of same month last year	7,232	9,675	44,075	1,750	8,118	253	10 5

MEMO.

	Rs.	A.	P.
Unrecovered balance on the 1st of the month	29	15	1
Amount of tolls for the month	329	9	10
Total	358	8	11
Amount credited in the accounts for the month	161	13	8
Balance at the end of the month	196	11	3

Kendrapara Canal and its Branch to Gundakia on the Gobri River.

LENGTH OF CANAL OPEN—69 MILES.

LOCAL TRAFFIC.

(1)—PRIVATE.

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS		Ton-milango.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			
	ARTICLES OF FOOD.	Mds.	Rs.				Rs. A. P.	A. P.
74	Paddy	9,450	14,100	18,124	617	12,905	142 15 8	.....
51	Rice	16,500	46,000	26,804	950	47,271	434 15 0	.....
12	Grain	650	2,000	1,350	48	1,737	18 3 2	.....
	Peas and other crops	500	3,000	911	33	1,783	18 0 0	.....
28	Jaggery	2,510	12,550	5,207	186	3,477	61 2 8	.....
	Turmeric	200	1,000	594	20	310	3 12 0	.....
	Salt	1,000	7,000	2,757	98	2,725	28 14 5	.....
6	Coriander	200	1,100	502	18	700	6 15 7	.....
	Spices	100	2,000	222	8	320	3 4 0	.....
	Fish (salt)	200	1,250	510	18	300	5 0 0	.....
3	Betel leaves	40	200	175	6	78	1 9 6	.....
1	Cocanuts	20	80	55	2	24	0 9 0	.....
	CLOTHING.							
20	Miscellaneous piece-goods	7,400	65,970	12,770	456	23,332	240 9 9	.....
	STAPLES OF MANUFACTURE.							
3	Jute	400	3,000	916	33	576	11 10 0	.....
4	Hides	1,500	15,000	2,803	103	4,950	50 5 6	.....
5	Til-seed	800	4,500	1,620	58	2,436	25 4 0	.....
9	Thread	2,500	3,00,000	4,067	145	6,190	64 4 0	.....
	BUILDING MATERIALS.							
1	Bricks	60	10	93	3	15	0 7 2	.....
2	Lime	800	210	1,138	41	1,134	15 7 6	.....
3	Timbers	300	1,500	1,153	41	902	14 3 3	.....
	FUEL.							
4	Firewood	900	80	2,123	76	3,708	45 0 0	.....
	COOKING UTENSILS AND OTHER DOMESTIC IMPLEMENTS.							
3	Earthenware and earthenpots	110	20	225	8	248	3 6 9	.....
	MISCELLANEOUS.							
73	Passengers (3,762 in number)	.....	.....	24,043	852	49,855	820 11 4	.....
245	Empty boats	.....	.....	30,101	1,077	31,162	102 3 5	.....
	Timbers (5 in number)	.....	20	.....	.....	.....	0 7 0	.....
9	Offences	1,650	1,050	3,166	113	3,295	40 3 6	.....
1	Plank	50	50	72	3	117	0 15 0	.....
4	Tal Umbrellas	200	50	318	11	244	3 13 10	.....
1	Gaul-nuts	300	600	497	18	756	7 11 8	.....
4	Gunny-bags	100	6,000	1,408	53	2,544	27 10 0	.....
590	Total	48,820	4,90,270	1,46,300	5,224	2,01,170	2,327 0 0	0 2 2
467	Total of same month last year	45,440	2,17,065	1,34,240	4,794	2,07,532	2,065 3 5	0 1 0

(2)—STORES AND MATERIALS FOR IRRIGATION WORKS.

	BUILDING MATERIALS.	Mds.	Rs.				Rs. A. P.	A. P.
29	Laterite stones	9,400	150	17,578	627	25,221	261 4 0	.....
1	Rubble stone	400	10	600	22	154	3 0 0	.....
	MISCELLANEOUS.							
29	Empty boats	.....	.....	6,373	227	8,663	40 11 3	.....
4	Stores, &c.	110	250	235	8	238	2 8 4	.....
63	Total	9,910	1,010	24,756	854	31,278	313 7 7	0 2 8
90	Total of same month last year	10,500	2,800	29,064	1,068	22,363	163 5 6	0 1 4

ABSTRACT.

	Mds.	Rs.				Rs. A. P.	
590	Private, including miscellaneous	48,820	4,90,270	1,46,300	5,224	2,01,170	2,327 0 0
63	Government stores, including miscellaneous	9,910	1,010	24,756	854	31,278	313 7 7
659	Grand Total	58,730	4,91,280	1,71,056	6,108	2,37,448	2,640 7 7
	Deduct amount erroneously charged on Messrs. J. Bullock & Co., during June 1883	.....	.....	.....	.....	.....	8 0 0
							2,632 7 7
663	Grand Total of same month last year	55,000	2,20,825	1,63,906	5,862	2,20,945	2,220 8 11

MEMO.				Rs. A. P.
Unrecovered balance on the 1st of the month	.....	.....	.....	12,099 14 1
Amount of tollage for the month	.....	.....	.....	2,032 8 1
			Total	14,733 6 2
Amount credited in the accounts for the month	.....	.....	.....	8,171 16 10
Balance at the end of the month	.....	.....	.....	6,562 7 4

High Level Canal, Range I.
LENGTH OF CANAL OPEN—34 MILES.
LOCAL TRAFFIC.
 (1)—PRIVATE

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton-mileage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			
	ARTICLES OF FOOD.	Mds.	Rs.				Rs. A. P.	A. P.
17	Paddy	2,000	3,000	3,938	137	4,050	44 15 0	.....
80	Rice	10,000	30,000	18,092	668	22,201	22 11 0	.....
6	Grain	1,200	4,500	2,025	72	2,448	24 13 0	.....
1	Jaggery	200	1,000	286	10	350	3 7 0	.....
60	Salt	6,970	34,850	10,249	366	12,078	123 15 0	.....
2	Turmeric	500	2,500	843	30	890	10 5 0	.....
2	Fish (salt)	100	500	219	8	201	2 11 0	.....
	STAPLES OF MANUFACTURE.							
2	Hides	80	300	50	2	68	0 10 0	.....
	BUILDING MATERIALS.							
3	Tiles	300	10	400	10	524	5 10 0	.....
11	Timbers	700	3,500	1,188	42	1,134	30 3 0	.....
	MISCELLANEOUS.							
3	Passengers (14 in number)	.....	.....	331	12	384	4 11 0	.....
90	Empty boats	.....	.....	11,576	414	9,912	41 15 0	.....
27	Straw	2,000	50	6,178	221	2,431	20 0 0	.....
10	Sundries	1,600	25,000	2,940	105	3,492	30 1 0	.....
321	Total	25,000	1,05,810	58,881	2,103	60,400	585 0 0	0 12
170	Total of same month last year	8,390	44,690	26,267	938	27,048	259 6 9	0 17

(3)—STORES AND MATERIALS FOR IRRIGATION WORKS.

	MISCELLANEOUS.	Mds.	Rs.				Rs. A. P.	A. P.
6	Empty boats	.....	.....	6,321	220	7,458	38 14 0	.....
	Bamboos (2,000 in number)	.....	.....	30	.....	.....	1 11 0	.....
6	Total	.....	.....	6,351	220	7,458	40 12 0	0 10
...	Total of same month last year	.....	.....	.....	.....	.....	.....	.....

ABSTRACT.

321	Private, including miscellaneous	25,000	1,05,810	58,881	2,103	60,400	585 0 0	.....
6	Government stores, including miscellaneous	.....	.....	6,351	220	7,458	40 12 0	.....
327	Grand Total	25,000	1,05,810	65,232	2,320	67,857	625 12 0	.....
170	Grand Total of same month last year	8,390	44,690	26,267	938	27,048	259 6 9	.....

MEMO.

							Rs. A. P.	
	Unrecovered balance on the 1st of the month (deficit)	.....	.....	.....	.....	.....	501 1 0	.....
	Add for erroneous deductions in the statement for May last	.....	.....	.....	.....	.....	1,177 0 0	.....
	Actual balance on the 1st of the month	.....	.....	.....	.....	.....	675 15 0	.....
	Amount of tollage for the month	.....	.....	.....	.....	.....	625 12 0	.....
						Total	1,301 11 0	.....
	Amount credited in the accounts for the month	.....	.....	.....	.....	.....	675 6 3	.....
	Balance at the end of the month	.....	.....	.....	.....	.....	626 5 3	.....

High Level Canal, Range II.
LENGTH OF CANAL OPEN—12½ MILES.
LOCAL TRAFFIC.
 (1)—PRIVATE.

	ARTICLES OF FOOD.	Mds.	Rs.				Rs. A. P.	A. P.
2	Paddy	100	150	288	10	90	1 12 0	.....
10	Rice	1,800	5,400	3,134	112	1,423	19 7 0	.....
7	Pulses and other crops	1,100	4,100	2,133	79	912	13 5 0	.....
1	Dry mangoes	50	100	108	4	48	0 11 0	.....
1	Jaggery	200	1,000	357	13	150	3 3 0	.....
4	Salt	1,000	5,000	2,310	82	571	14 7 0	.....
1	Turmeric	100	500	234	8	90	1 7 0	.....
	STIMULANTS.							
1	Tobacco	50	500	123	4	48	0 12 0	.....
	STAPLES OF MANUFACTURE.							
1	Castor seed	100	400	205	7	84	1 4 0	.....
	BUILDING MATERIALS.							
1	Tiles	300	20	479	17	110	2 15 0	.....
	MISCELLANEOUS.							
22	Empty boats	.....	.....	1,090	71	845	5 0 9	.....
	Cycles (23 in number)	.....	10	.....	.....	.....	0 2 0	.....
	Small doughs (45 in number)	.....	.....	.....	.....	.....	12 15 0	.....
57	Total	4,800	17,430	11,530	401	4,323	77 6 0	0 20
54	Total of same month last year	7,380	31,320	15,662	543	5,617	63 6 8	0 27

High Level Canal, Range II—concluded.

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton- mileage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Mauuds.	Tons.			
(2)—STORES AND MATERIALS FOR IRRIGATION WORKS.								
	BUILDING MATERIALS.	Mds.	Rs.				Rs. A. P.	A. P.
12	Kurkutchu	3,600	60	6,080	255	1,392	40 15 0	.....
4	Laterite stones	2,000	30	2,078	100	1,272	18 9 0	.....
	FUEL.							
1	Firewood	100	50	930	33	23	5 13 0	.....
	MISCELLANEOUS.							
12	Empty boats .....		.....	3,015	108	888	9 5 9	.....
	Small dinghies (8 in number) .....		.....				2 4 0	.....
1	Boumtrass	250	50	624	23	22	8 15 0	.....
30	Total	6,200	190	14,131	504	3,007	80 12 9	0 4 2
15	Total of same month last year	2,000	60	4,840	173	1,110	29 5 0	0 5 0

ABSTRACT.

	Mds.	Rs.				Rs. A. P.	A. P.
57	Private, including miscellaneous	4,800	17,380	11,536	404	4,525	77 6 6
30	Government stores, including miscellaneous	6,200	190	14,131	504	3,607	80 12 9
87	Grand Total	11,000	17,570	25,667	908	7,032	158 3 3
60	Grand Total of same month last year	10,130	34,380	14,402	516	4,737	92 15 0

MEMO.

	Rs. A. P.
Unrecovered balance on the 1st of the month	524 11 6
Amount of tollage for the month	158 3 3
Amount credited in the accounts for the month	Total 682 14 0
Balance at the end of the month	350 8 0
	323 0 9

High Level Canal, Range III.

LENGTH OF CANAL OPEN—20 MILES.

LOCAL TRAFFIC.

(1)—PRIVATE.

	ARTICLES OF FOOD.	Mds.	Rs.				Rs. A. P.	A. P.
6	Rice	500	1,500	1,084	30	567	6 10 6	.....
1	Jaggery	100	500	297	11	143	1 13 6	.....
	STIMULANTS.							
1	Tobacco	50	500	131	5	50	0 13 6	.....
	MISCELLANEOUS.							
3	Empty boats			170	6	78	0 8 6	.....
	Small dinghies (6 in number)						1 11 0	.....
11	Total	650	2,500	1,687	61	778	11 9 0	0 2 4
14	Total of same month last year	200	805	1,304	50	340	7 14 1	0 4 0

(2)—STORES AND MATERIALS FOR IRRIGATION WORKS.

	BUILDING MATERIALS.	Mds.	Rs.				Rs. A. P.	A. P.
10	Kurkutchu	3,000	50	5,008	182	1,450	31 13 6	.....
	MISCELLANEOUS.							
12	Empty boats			2,386	85	830	7 4 9	.....
22	Total	3,000	50	7,494	267	2,306	38 6 3	0 3 3
14	Total of same month last year	2,000	50	4,840	173	1,225	26 5 0	0 4 0

ABSTRACT.

	Mds.	Rs.				Rs. A. P.	A. P.
11	Private, including miscellaneous	650	2,500	1,687	61	778	11 9 0
22	Government stores, including miscellaneous	3,000	50	7,494	267	2,306	38 6 3
33	Grand Total	3,650	2,550	9,171	328	3,084	50 15 3
28	Grand Total of same month last year	2,200	835	6,250	223	1,574	33 0 1

MEMO.

	Rs. A. P.
Unrecovered balance on the 1st of the month (deficit)	100 13 4
Add for erroneous entries in the statement for May last	385 0 0
Actual balance on the 1st of the month	214 3 8
Amount of tollage for the month	50 15 3
Amount credited in the accounts for the month	Total 264 11 1
Balance at the end of the month	214 2 11

SOUTH-WESTERN CIRCLE.

Midnapore Canal.

LENGTH OF CANAL OPEN—53 MILES.

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton- mileage.	Tollage.	Rate of toll per ton-mile
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			

LOCAL TRAFFIC.

(1)-PRIVATE.

ARTICLES OF FOOD.				Mds.	Rs.			Rs. A. P.	A. P.
128	Paddy	...	...	21,290	16,023	39,102	...	675	2 0
890	Rice	...	...	1,00,550	2,62,545	2,05,745	...	3,629	4 3
2	Wheat	...	...	300	1,200	825	...	3	1 6
170	Gram	...	...	25,375	88,005	59,030	...	404	7 9
9	Betel-nuts	...	...	1,190	7,050	2,003	...	22	12 0
54	Fruits and vegetables	...	...	4,005	7,044	10,712	...	70	5 8
90	Sugar (unrefined)	...	...	18,500	80,087	37,720	...	175	10 0
108	Salt	...	...	46,105	1,38,100	91,100	...	1,004	0 0
4	Cocoanuts (number 0,000)	...	...	438	109	985	...	12	11 3
21	Mustard oil	...	...	2,100	10,845	0,070	...	04	0 3
1	Spices	...	...	200	400		...	3	8 0
50	Betel leaves	...	...	1,813	18,048	4,925	...	82	4 9
26	Curd	...	...	2,600	0,607	0,880	...	44	12 6
STIMULANTS.									
1	Intoxicating drugs	...	...	30	30	80	...	0	0 0
40	Tobacco	...	...	6,105	2,495	19,885	...	161	15 0
CLOTHING.									
10	Cotton piece-goods (India)	...	...	705	89,750	4,800	...	35	1 0
47	Ditto ditto (European)	...	...	1,405	1,30,400	5,115	...	34	10 0
STAPLES OF MANUFACTURE.									
30	Brass	...	...	7,395	3,00,750	17,100	...	138	8 0
23	Copper	...	...	4,100	1,02,600	12,025	...	81	1 4
3	Iron	...	...	175	1,000	481	...	2	2 0
12	Silk	...	...	105	60,300	2,215	...	15	15 3
10	Cotton	...	...	1,620	20,700	4,305	...	30	7 3
39	Cotton twist and yarn (European)	...	...	5,800	1,72,800	18,525	...	100	11 0
12	Jute	...	...	1,750	5,000	3,875	...	19	4 6
9	Hides (8,080 in number)	...	...	1,200	14,650	2,050	...	39	15 0
1	Other fibres, raw	...	...	20	50	70	...	0	0 0
1	Canes	...	...	50	200	150	...	0	0 0
13	Linseed	...	...	4,700	14,100	8,025	...	103	0 6
3	Other oil-seeds	...	...	800	3,200	1,000	...	14	0 0
31	Mustard seed	...	...	5,500	18,000	11,300	...	52	12 0
3	Til seed	...	...	700	2,800	1,050	...	13	5 0
BUILDING MATERIALS.									
7	Tiles (22,000 in number)	...	...	1,225	350	2,025	...	17	13 0
10	Lime	...	...	1,700	1,250	5,850	...	17	3 0
2	Glueing	...	...	150	16	280	...	1	1 0
28	Sand	...	...	9,200	1,015	16,200	...	65	13 9
28	Unwrought timber and piles, Nos. 31 and 857	...	...	2,087	8,895	4,758	...	44	5 3
4	Bamboos (1,300 in number)	...	...	100	72		...	4	0 0
FUEL.									
54	Coal and coke	...	...	14,450	5,824	30,750	...	260	1 0
25	Firewood	...	...	5,455	2,050	11,715	...	110	1 6
COOKING UTENSILS AND OTHER DOMESTIC IMPLEMENTS.									
40	Earthenware and earthen pots	...	...	5,460	1,480	11,575	...	70	13 0
12	Stone plates	...	...	2,040	2,400	6,025	...	87	13 0
MISCELLANEOUS.									
282	Sundries	...	...	10,250	37,308	45,800	...	271	7 0
1,204	Passenger boats	...	...			70,195	...	623	9 11
1,205	Empty boats	...	...			1,10,000	...	1,010	14 3
61	Straw, 1,100 kahuna	...	...	14,500	4,012	32,550	...	167	3 6
84	Oil-cake	...	...	14,010	14,010	34,175	...	159	3 0
1	Furniture	...	...	150	100	375	...	1	0 0
1	Sluts	...	...	100	2,0 0	375	...	11	4 0
13	Other oils	...	...	2,775	9,750	5,750	...	73	6 0
2	Saji	...	...	300	8 0	775	...	11	10 0
3	Stones	...	...	550	5,000	1,000	...	7	8 6
	Passengers (number 16,933)	...	...				...	270	0 11
	Demurrage, &c.	...	...				...	7	8 9
4,734	Total	...	...	4,11,000	17,23,240	10,68,931	37,910	6,50,293	10,168 4 10 0 2 0
4,385	Total of same month last year	...	...	3,79,004	17,54,390	9,71,370	84,799	6,31,734	9,093 7 3 0 2 0

(2)—STORNS AND MATERIALS FOR IRRIGATION WORKS

[illegible]

Midnapore Canal—concluded.

Number of boats.	Nature of Cargo.	APPROXIMATE		TOWNSHIP OF BOATS.		Ton-mileage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			
ABSTRACT.								
		Mds.	Rs.				Rs. A. P.	
4,374	Private, including miscellaneous	4,11,000	17,23,240	10,58,933	37,819	6,50,293	10,108 4 10	.....
...	Government stores, including miscellaneous	.....	.....	.....	.....	.....	.....	.....
4,374	Grand Total	4,11,000	17,23,240	10,58,933	37,819	6,50,293	10,108 4 10	.....
4,885	Grand Total of same month last year ...	3,79,004	17,54,390	9,74,370	34,708	6,31,734	9,906 7 8	.....

* This includes tolls on the Narasingpur channel, amounting to Rs. 220-0-6.

MEMO.		Rs. A. P.	
Unrecovered balance on the 1st of the month ... ..	...	1,360	14 0
Amount of tollage for the month ... ..	...	10,108	4 10
Total		11,629	8 7
Amount credited in the accounts for the month ... ..	...	10,154	10 0
Balance at the end of the month ... ..	...	1,574	9 7

Hidgellee Tidal Canal.

LENGTH OF CANAL OPEN—29 MILES.

LOCAL TRAFFIC.

(1)—PRIVATE.

	ARTICLES OF FOOD.	Mds.		Rs.		Rs. A. P.	A. P.
344	Paddy	37,205	28,095	74,885	.....	979	5 0
485	Rice	1,80,421	1,04,714	2,51,760	.....	3,060	5 0
2	Pulses and other crops	600	200	1,075	.....	7	0 5
67	Fruits and vegetables	3,123	4,523	5,335	.....	80	4 3
13	Jaggery	1,120	8,120	3,075	.....	48	10 6
2	Sugar	65	170	110	.....	1	1 3
71	Salt	15,749	41,567	34,670	.....	410	0 0
1	Curd	20	50	125	.....	0	18 0
11	Oil	1,040	1,310	8,000	.....	53	4 6
61	Fish	910	640	2,875	.....	20	2 0
STIMULANTS.							
38	Tobacco	8,841	62,050	23,155	.....	289	2 3
CLOTHING.							
10	Cotton piece-goods (European)	2,080	1,856	4,035	.....	64	13 0
STAPLES OF MANUFACTURE.							
1	Brass	80	80	275	.....	4	15 4
1	Iron	70	700	175	.....	1	8 8
1	Cotton twist and yarn (European)	100	2,000	350	.....	2	6 6
1	Jute	15	75	80	.....	0	8 0
4	Hides	235	1,510	880	.....	3	16 4
4	Mustard-seed	420	2,200	1,000	.....	8	9 0
BUILDING MATERIALS.							
1	Bricks	70	.....	125	.....	0	13 9
2	Chiselling-lime	240	480	400	.....	3	5 1
2	Chiselling	100	10	400	.....	2	12 0
2	Unwrought timber and piles	240	200	515	.....	6	4 6
1	Bamboos	100	60	475	.....	5	4 5
FUEL.							
2	Coal and coke	70	22	450	.....	5	10 0
2	Firewood	550	100	650	.....	4	7 6
COOKING UTENSILS AND OTHER DOMESTIC IMPLEMENTS.							
2	Earthenware and earthenpots	50	16	130	.....	1	2 0
MISCELLANEOUS.							
104	Passenger boats ... ..	.....	.....	7,400	.....	42	0 8
844	Empty do. ... ..	.....	.....	1,00,445	.....	1,002	5 0
101	Straw	20,850	7,095	43,400	.....	315	2 0
1	Oil-cake	60	15	100	.....	0	11 0
10	Mats	730	3,630	3,040	.....	25	2 0
42	Miscellaneous	2,425	6,372	6,300	.....	72	4 9
2,191	Total	2,28,050	3,07,897	6,70,000	20,003	3,70,925	6,018 11 0
1,900	Total of same month last year	1,80,447	3,13,439	4,68,975	16,392	3,15,417	5,597 5 0

Hidgellee Tidal Canal—concluded.

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton-mileage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Mauuds.	Tons.			

(3)—STORES AND MATERIALS FOR IRRIGATION WORKS.

	MISCELLANEOUS.	Mds.	Rs.				Rs. A. P.	A. P.
2	Empty boats	100	000	100	...	...	0 14 0	...
3	Stores, &c.	100	000	615	...	...	8 0 9	...
5	Total	100	000	615	22	513	8 15 3	0 3 3
1	Total of same month last year ...	60	96	175	6	181	3 2 9	0 3 3

ABSTRACT.

		Mds.	Rs.				Rs. A. P.	
2,101	Private, including miscellaneous ...	2,28,630	3,67,887	5,76,000	20,603	3,76,025	6,618 11 0	...
5	Government stores, including miscellaneous	100	000	615	22	513	8 15 3	...
2,106	Grand Total	2,28,810	3,68,787	5,77,615	20,625	3,77,438	6,627 10 3	...
1,962	Grand Total of same month last year ...	1,80,507	3,13,534	4,59,150	10,398	3,19,598	5,000 7 9	...

MEMO.

	Rs. A. P.
Unrecovered balance on the 1st of the month	2,012 0 0
Amount of tollage for the month	6,627 10 3
Total	8,640 4 0
Amount credited in the accounts for the month	8,615 12 6
Balance at the end of the month	624 7 6

SONE CIRCLE.

Eastern Main and Patna Canals.

LENGTH OF CANAL OPEN—86½ MILES.

LOCAL TRAFFIC.

(1)—PRIVATE.

	ARTICLES OF FOOD.	Mds.	Rs.				Rs. A. P.	A. P.
3	Khesary	308	907	534	16	634	7 12 3	...
31	Wheat	11,700	33,400	17,405	634	50,211	514 3 0	...
5	Fruits and vegetables	1,420	2,010	2,049	7	6,959	69 4 6	...
6	Salt	1,220	3,680	2,209	98	8,184	89 8 0	...
1	Travels	200	200	430	15	320	3 7 3	...
	STIMULANTS.							
2	Opium flowers	570	1,720	703	24	900	16 5 0	...
5	Do. leaves	678	335	1,304	59	4,353	50 0 0	...
34	Tobacco	9,131	26,805	18,235	652	38,710	399 12 9	...
	CLOTHING.							
1	Cotton piece goods (Indian)	289	3,000	317	22	1,254	13 16 0	...
	STAPLES OF MANUFACTURE.							
1	Brass	125	200	251	9	517	5 6 3	...
3	Iron	100	400	224	8	410	4 5 3	...
	Cotton	70	1,100	214	74	455	4 5 3	...
5	Hides	515	3,000	905	34	2,453	24 0 0	...
8	Horns	40,680	1,10,713	58,653	2,004	1,40,655	1,474 15 3	...
37	Lanseed	800	5,200	1,371	41	8,455	35 15 0	...
3	Koth	10	50	110	4	101	1 8 6	...
1	Glass	10	50	110	4	101	1 8 6	...
	BUILDING MATERIALS.							
2	Stone slabs	145	78	517	114	225	1 1 3	...
3	Do. lime	640	205	771	27	745	7 14 3	...
28	Bullahs, (9,508 in number) ... ..	...	9,435	...	...	...	104 1 6	...
	Bamboos, (5,69,173 in number) ... ..	...	...	...	...	...	7 4 6	...
2	Large bamboos	60	50	511	14	745	1 8 0	...
3	Iron girders for Gumbuck Division ... ..	...	...	819	29	107	...	...
	FUEL.							
1	Firewood	280	55	393	14	294	3 0 9	...
	MISCELLANEOUS.							
37	Miscellaneous goods	5,330	10,525	11,142	399	28,832	300 3 0	...
1	Passenger boat ... ..	...	...	43	14	45	0 8 9	...
200	Empty boats ... ..	...	...	30,000	1,004	55,007	275 0 3	...
13	Furniture	620	2,200	1,830	62	3,140	33 15 9	...
1	Mats	10	5	96	31	65	0 11 3	...
4	Gunny	171	500	885	31	223	0 7 0	...
4	Do. bags	335	2,100	1,385	40	3,118	35 5 9	...
3	Empty boats for iron girders ... ..	...	...	202	9	40	0 3 9	...
400	Total	25,337	2,30,902	1,53,093	5,505	3,58,442	3,540 1 5	0 1 8
477	Total of same month last year	20,625	1,96,403	1,47,340	5,305	3,49,923	3,520 8 3	0 1 4

Eastern Main and Patna Canals—concluded.

Number of boats.	Nature of Cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton-mileage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			
(3)—STORES AND MATERIALS FOR IRRIGATION WORKS.								
	BUILDING MATERIALS.	Mds.	Rs.				Rs. A. P.	A. P.
1	Groove stones	60	40	131	4	95	0 7 9	...
2	Timber	325	505	618	18	1,165	11 11 9	...
	MISCELLANEOUS.							
3	Empty boats for pipes ... ..	.....	.....	258	8	42	0 8 8	...
	Do. do. ... ..	.....	.....	289	11	230	0 14 0	...
	Stores	200	400	715	25	1,211	11 12 8	...
10	Total ...	585	1,005	1,840	48	2,744	25 1 6	0 17
12	Total of same month last year ...	2,000	150	1,016	27	547	4 0 3	0 15

ABSTRACT

		Mds.	Rs.				Rs. A. P.	
499	Private, including miscellaneous ...	75,357	2,30,002	1,55,668	5,505	3,59,442	3,540 2 9	.....
10	Government stores, including ditto ...	885	1,005	1,850	885	2,744	35 1 6	.....
500	Grand Total ...	75,022	2,31,007	1,55,503	5,573	3,61,186	3,575 3 3	.....
480	Grand Total of same month last year ...	62,025	1,90,613	1,43,202	5,395	3,50,470	3,524 14 6	.....

MEMO.					Ra.	A.	P.
Unrecovered balance on the 1st of the month	...	...	...	...	177	13	1
Amount of tollage for the month	...	...	...	...	3,865	3	5
				Total	...	...	...
					3,763	0	6
Amount credited in the accounts for the month	...	...	...	...	3,470	0	3
Balance at the end of the month	...	...	...	...	284	0	0

Western Main Canal.

LENGTH OF CANAL OPEN—22 MILES.

LOCAL TRAFFIC.

(1)-PRIVATE.

		ARTICLES OF FOOD.	Mds.	Rs.				Rs. A. P.	A. P.
65	Wheat	...	39,667	67,834	43,125	1,040	15,400	288 12 6	.....
1	Spices	...	200	1,000	325	11	825	2 0 6	.....
		STAPLES OF MANUFACTURE.							
2	Gutroo	...	653	318	925	33	2,810	5 12 0	.....
6	Linseed	...	2,463	7,359	5,150	112	8,685	19 11 0	.....
1	Mustard-seed	...	600	1,800	700	23	1,675	4 6 0	.....
		MISCELLANEOUS.							
1	Passenger boat	...	.....	.....	250	9	424	5 0 0	.....
1	Empty ditto	...	.....	.....	25	1	20	0 1 3	.....
1	Gunny bags	...	100	55	250	0	208	2 9 9	.....
77		Total	37,663	80,896	48,750	1,740	80,159	329 5 6	0 2 0
71		Total of same month last year	33,100	80,562	46,325	1,084	29,137	299 8 6	0 1 0

(2)—STORES AND MATERIALS FOR IRRIGATION WORKS

BUILDING MATERIALS.		Mds.	Rs.				Rs. A. P.	A. P.
7	Building stones	1,430	71-8	2,000	93	1,572	9 10 3	.....
7	Total	1,430	71-8	2,000	93	1,572	9 10 3	0 1
49	Total of same month last year	18,100	905	25,825	522	9,220	231 11 0	0 4

ABSTRACT

		Mds.	Rs.				Rs. A P.	A. P.
77	Private, including miscellaneous	37,000	69,890	44,750	1,740	50,150	828 5 0	.....
7	Government stores, including miscellaneous	1,430	71-8	2,600	185	1,672	9 10 5	.....
84	Grand Total ...	39,006	69,967-8	51,350	1,833	51,781	337 15 1	.....
120	Grand Total of same month last year ...	51,200	87,467	72,150	3,670	87,367	621 4 0	.....

	Memo.						B. A. P.
Unrecovered balance on the 1st of the month	94 1 0
Amount of tollage for the month	337 16 9
						Total	432 0 9
Amount credited in the accounts for the month	432 0 0
Balance at the end of the month	Nil.	

Arrah Canal.

LENGTH OF CANAL OPEN—65 MILES.

LOCAL TRAFFIC.

(1)—PRIVATE.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton-milage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			
ARTICLES OF FOOD.		Mds.	Rs.				Rs. A. P.	A. P.
24	Rice	8,421	8,454	7,021	250	13,351	120 9 0	.....
75	Wheat	23,003	84,232	44,803	1,601	1,17,143	693 3 0	.....
9	Pulses and other crops	351	702	1,271	44	776	8 10 0	.....
7	Fruits and vegetables	180	403	1,230	43	402	5 1 0	.....
2	Jaggery	245	612	745	10	541	4 3 0	.....
50	Salt	12,183	46,652	10,003	702	35,687	353 10 6	.....
1	Spices	200	1,000	346	12	900	5 1 3	.....
STIMULANTS.								
18	Tobacco	3,402	27,936	5,202	180	8,392	69 0 0	.....
STAPLES OF MANUFACTURE.								
4	Linseed	437	1,371	1,057	37	1,540	10 10 0	.....
1	Mustard seed	714	1,542	714	25	1,875	10 15 0	.....
6	Oil seed	6,447	10,441	3,197	114	8,650	61 11 9	.....
BUILDING MATERIALS.								
5	Bricks	604	290	1,507	57	504	3 6 0	.....
2	Building stores	258	1,250	958	34	2,002	14 8 0	.....
7	Stone lime	834	834	1,384	45	2,003	30 5 0	.....
1	Sand	140	85	220	10	420	4 2 0	.....
1	Unwrought timber and piles	634	485	684	24	1,680	14 12 3	.....
	Bamboos } (55,293 in number)	.....	.....	.....	.....	.....	37 1 0	.....
FUEL.								
1	Firewood	25	10	54	1	21	0 6 0	.....
MISCELLANEOUS.								
7	Passenger boat	.....	.....	512	18	492	7 3 3	.....
155	Empty	.....	.....	17,020	607	13,444	74 15 0	.....
1	Straw	90	45	100	6	72	0 12 3	.....
8	Furniture	632	1,002	1,412	65	820	8 11 6	.....
2	Treasure	90	18,590	300	13	150	1 11 0	.....
6	Gunny	418	422	1,015	36	2,136	19 0 0	.....
387	Total	65,337	2,17,764	1,11,347	3,064	2,14,873	1,592 8 3	0 1 4
418	Total of same month last year	63,316	1,75,593	1,10,140	4,245	2,20,404	1,644 8 6	0 1 3

(3) STORES AND MATERIALS FOR IRRIGATION WORKS.

	BUILDING MATERIALS.	Mds.	Rs.				Rs. A. P.	A. P.
18	Building stones	4,625	722	7,325	261	13,730	72 9 9	.....
MISCELLANEOUS.								
3	Empty boats	.....	.....	1,331	48	2,502	12 15 0	.....
3	Stores, &c	305	415	605	24	1,202	16 10 3	.....
20	Total	5,020	1,137	9,371	303	17,524	101 3 0	0 1 1
43	Total of same month last year	3,243	4,421	0,745	346	11,240	91 10 0	0 1 5

ABSTRACT.

	Mds.	Rs.				Rs. A. P.	
387	Private, including miscellaneous	65,337	2,17,764	1,11,347	3,064	2,14,873	1,592 8 3
29	Government stores, including miscellaneous	6,420	1,137	9,371	303	17,524	101 3 0
416	Grand total	70,357	2,18,901	1,20,718	4,367	2,32,397	1,693 12 0
460	Grand total of same month last year	66,559	1,80,014	1,28,804	4,591	2,31,704	1,735 14 3

MEMO.

	Rs. A. P.
Unrecovered balance on the 1st of the month	50 7 0
Amount of tollage for the month	1,683 12 0
Total	1,733 3 0
Amount credited in the accounts for the month	1,694 6 0
Balance at the end of the month	48 13 0

Buxar Canal.

LENGTH OF CANAL OPEN—43½ MILES.

LOCAL TRAFFIC.

(1)—PRIVATE.

Number of boats.	Nature of cargo.	APPROXIMATE		TONNAGE OF BOATS.		Ton-mileage.	Tollage.	Rate of toll per ton-mile.
		Weight of cargo.	Value of cargo.	Maunds.	Tons.			
	ARTICLES OF FOOD.	Rs.	Rs.	Rs.			Rs. A. P.	A. P.
12	Rice	980	900	2,075	74	2,094	33 13 3	.....
79	Wheat	24,179	39,244	34,407	1,239	12,390	442 1 0	.....
9	Fruits and vegetables (Jack)	50	100	150	6	202	8 4 3	.....
1	Jaggery	375	750	425	15	549	5 13 8	.....
6	Salt	1,100	2,300	2,108	77	108	63 2 0	.....
	CLOTHING.							
1	Cotton piece-goods (Indian)	200	700	300	10	360	4 2 0	.....
	STAPLES OF MANUFACTURE.							
2	Mowah	180	312	164	6	210	2 4 0	.....
5	Linseed	1,628	3,256	2,025	72	2,700	29 6 3	.....
	BUILDING MATERIALS.							
4	Building stores, rubble stone	.....	.....	925	33	66	0 14 3	.....
	Bulbais 2,100 No.	.....	.....	.....	.....	.....	50 2 0	.....
	Bamboos 98,000	.....	.....	.....	.....	.....	.....	.....
	Wood 500	.....	.....	.....	.....	.....	.....	.....
	MISCELLANEOUS.							
3	Passenger boat	.....	.....	200	7	228	2 2 8	.....
110	Empty	.....	.....	11,404	410	11,845	64 7 0	.....
2	Gunny	10	300	160	6	180	2 1 0	.....
225	Total	29,501	47,851	54,725	1,951	31,513	721 3 0	0 4 3
78	Total of same month last year	15,080	32,358	18,022	667	22,330	283 5 0	0 2 5

(2)—STORES AND MATERIALS FOR IRRIGATION WORKS.

		Mds.	Rs.				Rs. A. P.	
	Nil	.....	.....	.....	.....	.....	.....	.....
	Total	.....	.....	.....	.....	.....	.....	.....
	Total of same month last year	.....	.....	.....	.....	.....	.....	.....
	MISCELLANEOUS.							
1	Empty boats	.....	.....	175	6	253	1 4 0	.....
1	Total	.....	.....	175	6	253	1 4 0	0 0 9
66	Total of same month last year	1,175	2,350	14,225	500	14,727	91 10 11	0 1 1

ABSTRACT.

		Mds.	Rs.				Rs. A. P.	
225	Private, including miscellaneous	29,504	47,851	54,725	1,951	31,513	721 3 0	.....
1	Government stores, including miscellaneous	.....	.....	175	6	253	1 4 0	.....
226	Grand total	29,504	47,851	54,900	1,957	31,766	722 7 0	.....
166	Grand total of same month last year	14,261	34,708	39,147	1,173	37,063	580 0 0	.....

MEMO.

		Rs. A. P.
Unrecovered balance on the 1st of the month	.....	102 8 6
Amount of tollage for the month	.....	722 7 0
	Total	824 15 6
Amount credited in the accounts for the month	.....	733 8 3
Balance at the end of the month	.....	91 7 3

ABSTRACT.

CANAL.	TRAFFIC, 1883-84.		TRAFFIC, 1882-83.		REMARKS.
	During the month.	To end of the month.	During the corresponding month.	To end of the corresponding month.	
ORISSA CIRCLE.					
Taldunda	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Kendrapara	329 0 10	803 1 10	805 12 4	1,234 15 0	
High Level, Range I	2,032 8 1	12,894 7 2	2,229 8 11	10,317 13 5	
Ditto, ditto II	825 12 6	1,019 0 0	250 6 9	1,013 6 2	
Ditto, ditto III	158 3 3	1,442 1 6	92 15 0	1,701 12 6	
Ditto, ditto IIII	50 15 3	324 13 11	33 0 1	283 14 4	
Total Orissa Circle	3,397 0 11	17,386 1 5	3,120 11 1	14,641 12 5	
SOUTH-WESTERN CIRCLE.					
Midnapore	10,168 4 10	40,820 3 3	9,006 7 3	31,193 8 6	
Hidrellice Tidal	6,827 10 3	27,094 2 6	5,600 7 9	23,571 0 9	
Total South-Western Circle	16,795 15 1	68,833 5 9	15,606 15 0	57,764 9 3	
BONE CIRCLE.					
Eastern Main and Patna	3,545 3 3	4,737 5 9	3,524 14 6	10,457 1 0	
Western Main	837 15 9	1,040 9 6	651 4 0	840 7 0	
Arrah	1,684 12 0	6,811 6 0	1,735 14 3	2,230 13 6	
Buxar	722 7 0	3,190 1 3	389 0 8	530 9 7	
Total Bone Circle	6,399 6 0	15,825 6 6	6,162 1 5	13,857 6 1	
GRAND TOTAL	20,992 6 0	1,02,044 13 8	24,879 11 6	89,293 11 9	

GOVERNMENT TRANSPORT SERVICE.

CANAL.	TRAFFIC, 1883-84.						TRAFFIC, 1882-83.					
	During the month.			To end of the month.			During the corresponding month.			To end of the corresponding month.		
	Passenger.	Goods.	Total receipts.	Passenger.	Goods.	Total receipts.	Passenger.	Goods.	Total receipts.	Passenger.	Goods.	Total receipts.
ORISSA CIRCLE.												
Taldunda and Kendrapara	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.	No. Mds. Rs. A. P.
High Level	2,885 1,152 4,181 19 6	5,017 1,152 6,052 8 6	1,315 359 2,160 9 3	1,083 7,940 1,102 8 11	1,783 2,753 2,016 10 6	323 359 174 8 0	408 623 8,120 5 10					
Total Orissa Circle	3,078 2,002 2,344 5 5	6,800 3,006 10,069 3 0	1,638 359 2,335 1 3	4,962 623 8,105 15 4								
SOUTH-WESTERN CIRCLE.												
Midnapore	11,541 412 1,000 0 0	45,404 1,539 4,000 0 0	14,001 258 4,503 0 0	55,067 1,240 17,503 0 0								
Total South-Western Circle	11,541 412 1,000 0 0	45,404 1,539 4,000 0 0	14,001 258 4,503 0 0	55,067 1,240 17,503 0 0								
BONE CIRCLE.												
Eastern Main and Patna	611 2,127 593 9 3	1,028 3,813 1,017 11 3	1,103 2,748 253 2 0	5,204 11,922 4,674 8 9								
Western Main and Buxar	1,584 2,510 948 14 6	5,904 10,048 3,801 6 3	1,480 4,029 987 10 6	1,600 6,805 1,093 13 9								
Arrah	2,205 802 1,471 0 0	9,051 7,300 6,173 0 0	1,737 4,117 1,234 0 0	2,332 2,135 1,743 0 0								
Total Bone Circle	4,400 5,370 3,018 7 9	15,983 22,061 10,092 1 6	3,020 7,894 2,574 11 0	9,322 20,757 7,509 1 6								
GRAND TOTAL	19,979 7,883 9,863 13 2	68,247 27,826 25,661 4 0	20,628 8,611 9,712 12 0	60,251 22,629 33,600 6 10								

* Besides 4,002 parcels.
† Ditto 6 ditto.

TOTAL NAVIGATION RECEIPTS.

	EARNINGS, 1883-84.		EARNINGS, 1882-83.		REMARKS.
	During the month.	To end of the month.	During the corresponding month.	To end of the corresponding month.	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Orissa Circle	9,141 5 4	28,055 4 3	5,455 12 4	23,037 11 9	
Midnapore Canal	11,169 4 10	44,830 3 3	14,400 7 3	51,760 8 6	
Hidgelice Tidal Canal	6,827 10 3	27,094 2 6	5,600 7 9	23,571 0 9	
Bone Circle	9,327 13 9	20,917 8 0	9,086 12 11	21,388 7 7	
GRAND TOTAL	36,265 3 2	1,27,796 1 2	34,592 2 3	1,19,758 12 7	

G. F. E. S. NEILL, Major, M.S.C.,

Under-Secy. to the Government of Bengal,

P. W. Dept.

CALCUTTA,

The 17th September 1883.

PUBLIC WORKS DEPARTMENT.—BENGAL.

IRRIGATION BRANCH.

Statement showing heights over mean sea-level and low-water on the rivere Ganges, Bhagirathi, and Brahmapootra, for the month of August 1883.

Date.	RIVER GANGES.										RIVER BHAGIRATHI.				BRAHMAPOOTRA.		
	Mirzapore.	Benares.	Buxar.	Dinapore.	Monkhyr.	Sahibganj.	Rampore Beaulah.	Goalando.	Berhampore.	Krishnachur.							
	From Allahabad ... 80.	From Allahabad ... 134.	From Allahabad ... 60.	From Benares ... 90.	From Benares ... 177.	From Benares ... 87.	From Benares ... 287.	From Benares ... 110.	From Benares ... 381.	From Monkhyr ... 94.	From Benares ... 471.	From Sahibganj ... 90.	From Benares ... 501.	From Benares ... 130.	From Benares ... 70.	From Benares ... 170.	From Benares ... 170.
Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.	Height over zero of gauge, sea-level.
1st	17.00	224.33	17.35	18.30	25.50	158.53	14.33	120.18	20.83	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
2nd	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
3rd	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
4th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
5th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
6th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
7th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
8th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
9th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
10th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
11th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
12th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
13th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
14th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
15th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
16th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
17th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
18th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
19th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
20th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
21st	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
22nd	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
23rd	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
24th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
25th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
26th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
27th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
28th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
29th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
30th	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38
31st	18.00	225.22	18.50	18.50	26.00	159.13	14.17	120.02	20.81	88.83	20.35	82.35	18.50	87.44	21.90	24.50	173.38

G. F. R. S. NATH, Major, M.S.C.,
Under-Secy. to the Govt. of Bengal, P. W. Dept.

Dated 15th September 1883.

Calcutta and South-Eastern State Railway.

Statement showing Increases and Decreases in Tonnage of Staples carried over the line during the month of August 1883, as compared with the corresponding period of August 1882.

STAPLES.	1882.		1883.		1882.	1883.	Increase.	Decrease.
	Up.	Down.	Up.	Down.	Total.	Total.		
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
VI. Coal	...	41	...	87	41	87	46	...
XIV. 4. Rice	259	...	475	...	259	475	216	...
XIV. 5. Paddy	98	...	19	...	98	19	...	79
XXXVI. 2. Firewood	2,215	...	1,666	...	2,215	1,666	...	549
XXXVIII. 1. Unmanufactured building materials	9	160	...	19	9	19	...	90
Railway materials	...	107	...	70	107	127	20	...
Hay	543	...	308	30	543	312	...	41
Straw	47	...	3	...	47	3	...	17
Woolen	...	...	...	...	...	...	...	...
Sundries	13	181	41	158	144	169	25	...
Total	2,989	379	2,546	370	3,968	2,916	339	799

INCREASE.

Coal	...	Tons.
This increase is due to larger quantity of coal being required for the working of the mills.	...	46
Rice	...	216
This increase is due to working of the rice-mills at Canning this season.	...	...
Railway materials	...	20
This increase is due to materials required for the extension.	...	...
Sundries	...	55
This increase is due to works on the extension being pushed on	...	...

DECREASE.

Paddy	...	79
This decrease is due to unfavourable market.	...	...
Firewood	...	549
This decrease is due to wood wagons not being available sufficiently in consequence of stock condemned.	...	...
Railway materials	...	90
This decrease is due to working on the extension coming to a close.	...	...
Hay	...	41
This decrease is due to low rate in the market.	...	...
Straw	...	17
This decrease is due to unfavourable market.	...	...

Calcutta, the 17th September 1883.

R. G. MOOKERJEE, Manager.

Nalhati State Railway.

Statement showing Increases and Decreases in tonnage of Staples carried over the line during the month of August 1883, as compared with the corresponding period of August 1882.

STAPLES.	1882.		1883.		1882.	1883.	Increase.	Decrease.
	Up.	Down.	Up.	Down.	Total.	Total.		
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
XXII. 1 & 3. Brass and bell-metal ware	6	4	6	1	10	7	...	3
VII. Cotton	11	...	11	...	11	11	...	...
XIV. 2. Edible grain	80	30	35	26	110	63	...	47
VIII. 4. Piece-goods	27	...	28	...	27	28	1	...
XXX. 1 & 2. Silk and silk cloths	...	37	...	41	37	41	4	...
XXIX. 1 & 2. Seeds of all sorts	54	...	43	...	54	42	...	12
XXXVIII. Sundries	110	14	79	63	124	131	7	...
XXVII. Salt	48	...	41	...	48	41	...	7
XXXVIII. 1. Revenue stores	30	7	13	1	38	13	...	25
VI. Coal	573	...	597	...	576	597	21	...
XXXIII. 1 & 2. Sugar and jaggree	8	...	...	10	8	10	2	...
Total	748	92	1,351	133	840	1,364	623	93

INCREASE.

Coal	...	Tons.
This increase is due to some silk merchants having arranged to bring their coal by rail instead of by boat.	...	623

DECREASE.

Edible grain	...	47
This decrease is due to low rate.	...	...
Seeds of all sorts	...	12
This decrease is due probably to seeds for the Nuddea district passing via Howrah and Bhudeshur in consequence of East Indian Railway reduced monsoon rate from Calcutta to Howrah.	...	...
Revenue stores	...	25
No ballast is carried by ordinary train.	...	...

Calcutta, the 17th September 1883.

R. G. MOOKERJEE, Manager.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY.

Approximate Return of Traffic for week ended 8th September 1883, on 1,509 miles open.

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated.)	Total earnings.	TOTAL TRAIN-MILES RUN.		
	Number of Passengers.	Coaching receipts.	Weight carried.	Receipts.			Coaching.	Merchandise.	Total.
Total traffic for the week...	177,822	Rs. A. P. 1,79,470 0 0	Mds. c. 23,42,725 0	Rs. A. P. 6,09,270 15 1	Rs. A. P. 17,980 6 9	Rs. A. P. 8,08,631 5 10	60,808	130,401	191,209
Or per mile of railway	.....	118 14 11	.....	403 12 2	11 13 7	534 8 8	.....	.....	.....
For previous 9 weeks of half-year ...	1,725,090	17,30,401 18 0	2,10,19,187 10	59,07,153 11 1	1,53,506 9 7	78,20,101 1 8	885,294	1,263,451	1,518,745
Total for 10 weeks ...	1,902,912	19,38,871 18 0	2,32,61,912 10	63,16,423 10 2	1,71,487 0 4	86,96,782 7 6	916,182	1,393,852	2,010,034
COMPARISON.									
Total for corresponding week of previous year ...	167,740	2,08,482 13 10	20,81,029 0	4,38,614 13 6	18,038 9 10	6,59,136 5 1	82,079	98,505	181,344
Per mile of railway corresponding week of previous year ...	.....	134 6 1	.....	291 1 7	11 15 7	437 7 8	.....	.....	.....
Total to corresponding date of previous year ...	1,707,436	20,62,686 1 9	2,15,52,085 10	54,83,406 8 7	1,99,236 6 6	79,95,225 12 0	881,096	1,134,039	1,076,796

Approximate statement of gross receipts of the East Indian Railway.

RECEIPTS FOR WEEK ENDING 8TH SEPTEMBER 1882.			RECEIPTS FOR WEEK ENDING 8TH SEPTEMBER 1883.			TOTAL RECEIPTS FROM 1ST APRIL 1882 TO 8TH SEPTEMBER 1882.			TOTAL RECEIPTS FROM 1ST APRIL 1883 TO 8TH SEPTEMBER 1883.			Total increase in 1883.	Total decrease in 1883.
Mean mileage worked.	Receipts.	Per mile worked.	Mean mileage worked.	Receipts.	Per mile worked.	Mean mileage worked.	Total receipts.	Per mile worked.	Mean mileage worked.	Total receipts.	Per mile worked.		
1,509	Rs. 4,59,136	Rs. 437	1,509	Rs. 8,06,621	Rs. 535	1,509	Rs. 1,92,87,291	Rs. 12,801	1,509	Rs. 2,27,08,918	Rs. 15,049	Rs. 34,21,626	.....

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

Latest return received.	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1883.	Total decrease in 1883.	Percentage of increase or decrease.
			29th July 1882.	28th July 1883.	To 29th July 1882.	To 28th July 1883.			
1882.		Miles.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.
11th August	Northern Bengal	230	34,594 0 0	49,196 0 0	11,19,145 0 0	13,21,619 0 0	2,06,604 0 0	.....	+18.3
14th Do.	Tehar	100	12,077 0 0	13,142 0 0	2,84,323 0 0	4,77,105 0 0	88,732 0 0	.....	+31.4
11th Do.	Calcutta and South-Eastern.	56	4,093 0 0	7,120 0 0	1,11,476 0 0	1,50,390 0 0	65,904 0 0	.....	+59.4
14th Do.	Nalliah	27	1,154 0 0	1,459 0 0	61,529 0 0	48,915 0 0	7,286 0 0	.....	+17.4
Total		479	52,518 0 0	70,917 0 0	15,60,003 0 0	20,31,049 0 0	3,70,446 0 0	.....	+23.5

DARJEELING-HIMALAYAN RAILWAY COMPANY, LIMITED.

Weekly Statement of Traffic Receipts.

The latest return received.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1st JULY.		Total increase in 2nd half-year of 1883.	Total decrease in 1883.	Percentage of increase or decrease.
		5th August 1882.	4th August 1883.	8th August 1882.	4th August 1883.			
14th September 1883	50	Rs. A. P. 6,109 1 0	Rs. A. P. 10,724 14 6	Rs. A. P. 29,037 1 9	Rs. A. P. 29,267 10 5	Rs. A. P. 11,180 0 5	Rs. A. P.	+39.1

Calcutta, the 14th September 1883.

GILLANDERS, ARBUTHNOT & Co., Agents.

DARJEELING-HIMALAYAN RAILWAY COMPANY, LIMITED.

Weekly Statement of Traffic Receipts.

The latest return received.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1st JULY.		Total increase in 1883.	Total decrease in 1883.	Percentage of increase or decrease.
		12th August 1882.	11th August 1883.	13th August 1882.	11th August 1883.			
17th September 1883	50	Rs. A. P. 3,446 12 0	Rs. A. P. 10,115 11 6	Rs. A. P. 31,613 13 6	Rs. A. P. 49,263 5 11	Rs. A. P. 17,649 5 11	Rs. A. P.	+66.1

Calcutta, the 17th September 1883.

GILLANDERS, ARBUTHNOT & Co., Agents.



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, SEPTEMBER 26, 1883.

OFFICIAL PAPERS.

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RESOLUTION ON THE ANNUAL REPORT ON THE ADMINISTRATION OF THE TRIBUTARY STATES OF ORISSA FOR THE YEAR 1882-83.

POLITICAL.

Dated Darjeeling, the 12th September 1883.

RESOLUTION.

READ—

The Annual Report on the Administration of the Tributary States of Orissa for the year 1882-83.

Read also—

The Reports for 1880-81 and 1881-82, and the orders of Government recorded thereon.

A most important question in connection with these Mehals, and their position with reference to the British Government, came under the consideration of Government during the past year. They have hitherto been regarded as forming a part of British India, to which, owing to its backwardness, it was not thought desirable to extend the laws in force in other parts of the Empire. In a case referred to the High Court, however, a Full Bench decided, just before the commencement of the year, that the Mehals are not a part of British India. This decision, though not a unanimous one, raised the question of the actual status of the Mehals, and the Lieutenant-Governor considered it advisable to address the Government of India on the subject, and to suggest

that it is desirable to affirm by an authoritative declaration the fact of the inclusion of the States in British territory.

2. In consequence of the death of the Maharajah of Mohurbhunj, that State, the largest in the Tributary Mehals, has been brought directly under Government management. The relations of the deceased Maharajah were desirous of having the management of the State placed jointly in the hands of the two surviving brothers of the late Maharajah; but for various reasons it did not appear to the Lieutenant-Governor that the arrangement would be a desirable one. The appointment was first offered to the Native Assistant Superintendent of the Tributary Mehals, and on his declining it, a European officer has been appointed to be Manager.

3. Banki having been annexed to Cuttack from the 1st January 1882, there was one State less under the Superintendent's charge than during the preceding year. In the past year he had under direct management five States, two of which—Angul and the Khondmals—are Government estates, and the other three—Baramba, Dhenkenal and Mohurbhunj—Ward estates; the remaining 14 States were under the management of their respective Chiefs subordinate to the Superintendent.

4. Excluding the two Government estates, the annual tribute due from the remaining 17 is Rs. 33,249. During 1881-82 Rs. 10,167 was collected in advance on account of the tribute for the past year, and during 1882-83 all the balance was collected, and Rs. 10,620 was paid in, in addition, on account of the tribute for the current year.

5. Excluding the figures for Keonjhur, which are evidently incorrect, the statistics show that there was an average rainfall of 61·8 inches in the six Mehals for which this information is given. Owing to an ample rainfall in October and November, and the fine weather in December and January, the rice crop was a good one, and the season was generally an extremely prosperous one. As regards health, the year was not so favourable. Epidemics of cholera and small-pox broke out in various parts. There was a very severe epidemic of the latter disease in the Mohurbhunj State, which lasted three months and carried off the Maharajah of that State and his Rani.

6. There was a slight decrease in the number of civil, revenue and miscellaneous cases instituted in the Mehals during the past year as compared with the year which preceded it; the number, however, was still large, being 6,131 as compared with 6,367 in 1881-82. Of these, 3,924 cases, as compared with 2,661 cases in the preceding year, belonged to Dhenkenal. Had not Banki been annexed to Cuttack, the total for the Tributary Mehals would, no doubt, have exceeded that of the preceding year. Including 1,647 cases pending at the commencement of the year, there were in all 7,778 cases for disposal during it. Of these, 181 were disposed of by the Superintendent, 464 by the Assistant Superintendent, and 6,006 by tehsildars and managers. The remaining 1,127 were pending at the close of the year. Civil cases tried by the Rajahs of the different States are not entered in the statement, as the Superintendent is not supplied with statistics regarding them.

7. During the year 2,040 offences were reported. Some of the cases were abandoned, and some were declared false, the number of true cases being 1,543. Including cases pending from the preceding year, the total number of cases which came before the criminal courts during the past year was 1,594. In connection with these cases, 2,585 persons were put upon their trial. Of these, 1,074 were convicted, 1,186 were acquitted, 79 died, escaped or were transferred, and the cases against 246 were pending at the close of the year. Of the persons who escaped, 46 escaped from the Mohurbhunj Jail about the time of the Maharajah's death. As this was the time when the epidemic of small-pox was raging in that State, the escapes were, no doubt, facilitated by relaxation in the vigilance of the guard. There had been a large increase in the number of criminal cases during the year 1881-82; the number of cases during that year was 2,165, while the number of cases reported and brought to trial during the past year only amounted to 1,484. This decrease is satisfactory, though it is in part attributable, no doubt, to the exclusion of Banki, in which Mehal 349 criminal cases occurred during 1881-82.

8. The results of the appeals, both civil and criminal, were satisfactory. In civil and revenue cases there were 70 appeals; of these the original orders

were confirmed in 36 cases, in 3 the appeals were rejected summarily, in 8 dismissed for default, in 1 case the order was modified and in 1 it was reversed; 9 cases were remanded and 12 were pending at the close of the year. Out of 31 criminal appeals, the original orders were upheld in 23, modified in 1, and reversed in 5 cases; 1 appeal was rejected and only 1 was pending at the end of the year.

9. No orders have yet been passed on the representations made by the Maharajahs of Mohurbhunj and Keonjhur, during the year preceding that under report, regarding the rules on the subject of catching wild elephants, as the settlement of this question will depend on the ultimate decision which may be arrived at regarding the status of the Tributary Mehals. During the past year accordingly several of the Chiefs took out licenses under the rules, and paid the prescribed royalty on the animals caught.

10. Some progress has been made in the arrangements for introducing a system of forest conservancy into such parts of the Tributary Mehals as are under direct management. Mr. Davis, Deputy Conservator of Forests, was engaged in examining and marking out the tracts in Angul which are to be formed into forest reserves. The examination has shown that it is worth while to preserve the forests, and the Superintendent considers that the blocks selected are suitable for the purpose. There is some difficulty about determining the boundaries between Angul and the bordering States which will eventually have to be removed. The Superintendent proposes to consider this question in connection with the resettlement of Angul, as the present settlements come to an end in 1887, and the Lieutenant-Governor will await the separate report which the Superintendent promises to submit on the subject. Mr. Davis had not leisure to visit the Khondmal forests, and these, as well as the forests in Mohurbhunj and Dhenkenal, remain to be examined. It may be possible to depute an officer from the Forest Department to undertake the work during the ensuing cold season.

11. But little was done during the year to improve the internal communications in the Mehals. A new road was, however, constructed in Dhenkenal, and a portion of another road which runs through that State was also completed. The completion of the portion of this latter road which runs through Atgur has been delayed by the obstructiveness of the Rajah of that State, who objects to allow a road to run through his State which will benefit the Dhenkenal State, against which he has the alleged grievance that it, in the times of the Maharattas, absorbed a portion of Atgur. The Lieutenant-Governor is surprised at such meaningless opposition, especially as the road must also benefit Atgur; he trusts, however, that the correspondence which the Superintendent states is going on between himself and the Rajah, and the interview which he was about to have with that Chief, may have the effect of convincing the latter of the shortsightedness of his policy, and may be followed by the speedy construction of the road. The opening of the Kumarkhole Pass, in the Khondmals, during the year, will, it is stated, facilitate communication between the South and the Central Provinces. The Superintendent notices the unsatisfactory state of the two principal roads in the Mehals which run from Cuttack to Sumbulpore; they are below flood-level, and are not metalled or bridged; they have no side drains and are impassable during the greater part of the rains. Bridging and metalling these roads would, no doubt, be very costly; but something might be done towards raising them sufficiently to keep them open for traffic throughout the year.

12. There was a very satisfactory increase in the number of schools during the past year. Excluding the figures for Banki, the number of schools was 920 in 1881-82 as compared with 1,004 in 1882-83, the number of pupils being 11,878 and 12,576 in these years respectively. Middle English secondary schools increased from 3 to 4, and vernacular schools of the same class from 7 to 8. Upper primary schools increased from 46 to 52, and lower primary schools from 853 to 928. There is only one girls' school in the Mehals, established by the Cuttack Baptist Mission at Chhagan in Atgur. Female education is not, however, limited to this school, as girls read in some of the boys' schools. The Mehals are divided into four educational circles, each of which is in charge of a Sub-Inspector, and under some of them inspecting

pundits are employed. The total cost of the schools in the Mohals was Rs. 59,331, of which Rs. 7,724 was contributed by Government.

13. The postal arrangements continue to work satisfactorily. Every State is now in communication with Cuttack. The Mohurbhunj line has been taken up, and is now carried on at the expense of Government. The Chiefs are required to contribute only to the cost of the post-office establishments and contingencies, as the offices are able to pay for the runners; and the monthly sum paid by them has accordingly been reduced from Rs. 250 in 1880-81 and Rs. 159 in 1881-82 to Rs. 145 during the past year.

14. During the year preceding that to which the report relates, the collections in Angul did not amount to the demand. The results, however, during the past year were much better. Not only was the whole demand on account of land revenue, which, including arrears, amounted to Rs. 36,072, realized, but Rs. 781 on account of the current year's demand were also collected. The Superintendent alludes to the report called for in the Resolution on the Report for 1881-82 on a change in the form of accounts in Angul. Some alteration was necessitated by the difficulty in preparing the statement of expenditure on account of payments being partly made from the Cuttack Treasury. The report has been under the consideration of Government, and since the close of the year a change in the form of accounts and the introduction of the sub-divisional treasury system into Angul has been sanctioned. The Lieutenant-Governor trusts that with these changes all difficulties will disappear. Life tenures, amounting in area to 30,073 acres, were at the last settlement granted to their holders either rent-free or at half rent. The death of some of the grantees has rendered the re-assessment of their holdings necessary, and out of 22,126 acres, which have already been re-assessed, or have become liable to re-assessment, the holders of 14,000 acres have died within the last three years. This materially increased the amount of work to be done; and there being at the end of the past year 34 cases relating to lands comprising 13,240 acres to be disposed of, the Superintendent submitted a proposal for an increase of establishment which has since been sanctioned. In Angul are found the Pans, a class, as a rule, of habitual thieves and burglars. The Pans, notwithstanding their habitually criminal propensities, furnish many of the village watchmen, as the Dosadhs do in Behar; and in order to bring them under control, Mr. Ravenshaw, when Superintendent, appointed a sirdar and ten beharas, to whom grants of land were made, and to whom he assigned the duty "of inducing their brethren to settle down as peaceful subjects, and to aid and assist the police in the detection of crime." Although occasionally suspicion attaches to some of the Pan beharas of receiving from thieves a portion of the booty as the price of their silence, there does not appear to have been a single instance in which this offence has been brought home to any of these men, and the arrangements made by Mr. Ravenshaw are stated to have worked favourably on the whole, and to have been the means, not only of preventing, but of detecting crime, which would otherwise never have been found out. Every effort is now being made to induce the Pans to settle down as cultivators, and there "appears to be an increasing desire amongst them to take to agriculture, and applications from them for the lease of waste lands are more numerous than before, and are freely granted." The Lieutenant-Governor wishes that every encouragement should be given to this desire. The success of recent endeavours to induce the Mughya Domes in Chumparun to abandon their former predatory habits leads Mr. Rivers Thompson to hope that a similar result may be obtained amongst the Pans.

15. Shortly before the commencement of the year, a serious rising among the Khonds of Kalahandi, a State in the Central Provinces adjoining Boad, was reported to this Government, and the District Superintendent of the Gurjhat Police was ordered to the frontier, so as to be in readiness in the event of any attempt on the part of the Khonds of the Gurjhats, or of the Khondmals, to join those of Kalahandi. The original cause of the outbreak was shortly this:—The Rajah of Kalahandi, who had oppressed and endeavoured to break up the Khond clans, having died, an adopted son was chosen to succeed him. A son previously adopted, but whose adoption had been annulled, was a rival claimant, and on being superseded, a leading man of his faction, by persuading the Khonds that they should try to recover

their ancient rights, successfully incited those in the north-east part of the State, which borders on the Tributary Mehal of Boad, to rise. They rose and plundered a number of villages, but subsequently were induced to restore the property plundered from some of the villages, and it was hoped that matters would settle down. While, however, enquiries were being made by the authorities of the Central Provinces into the claims of the Khonds, a more serious outbreak took place, in which the Khonds murdered a large number of Kultias. Mr. Sandilands, Assistant Superintendent of Police, Bengal, who, before the second outbreak, had been sent to the frontier with additional men, crossed the frontier with a police force, entered Kalahandi, and lent the authorities assistance in quelling the outbreak and arresting a number of the ringleaders in the murders which had been committed. He remained in Kalahandi till July, when the necessary arrangements having been completed by the authorities in the Central Provinces, his presence was no longer required, and he and the police were withdrawn. No attempt was made by the Khonds within the frontier to join the insurgents in Kalahandi.

16. The minor Chief of Dhenkenal was, during the past year, a resident of Cuttack, at which town he is being educated in the Ravenshaw College, his private tuition being in the hands of Baboo Piari Mohun Sen, Deputy Inspector of Schools, of whose services the Superintendent speaks highly. Mr. Smith thinks, however, that the Chief is attaining a position in which it is desirable to obtain the services of a more qualified tutor, and he has recently submitted proposals for the appointment of a European tutor to supervise the education of this Chief, as well as that of the minor Chief of Mohurbhunj. The Lieutenant-Governor has not, however, considered it necessary at present to appoint such an officer. The total demands on account of land revenue and other demands in the Dhenkenal State was Rs. 2,11,000. Of this amount, excluding Rs. 2,020 collected in advance, Rs. 2,02,683 was collected and Rs. 1,435 remitted, the balance at the close of the year being Rs. 6,882. The smallness of the balance uncollected at the close of the year reflects credit on the management. There were 64 prisoners in the Dhenkenal Jail at the commencement of the year, and during it 128 were admitted and 162 were released, 40 remaining in confinement at its close. The total expenditure on the jail was Rs. 2,227. The State will remain under direct management for only three years longer, as, on the expiration of that period, the minor Chief will attain his majority. It is to be hoped that, when he assumes the administration of his State, he will adopt the same enlightened policy as his father—a policy which, continued as it has been since his death, has made Dhenkenal the most advanced of all the Tributary Mehals.

17. Satisfactory progress has been made in the new settlement in Baramba; the measurements have been completed and the work of assessment is now going on. In consequence of the state of affairs in Duspulla, and the want of cordial relations between the Chief of that State and his Dewan, the Dewan of Baramba was transferred to that State, his place being taken by the Dewan of Duspulla. The Lieutenant-Governor trusts that the arrangement may prove satisfactory. The total demand for the year was Rs. 28,773; of this Rs. 18,109 were collected and Rs. 384 were remitted, leaving an outstanding balance of Rs. 10,280. The largeness of this amount is, the Superintendent states, due to the fact that the State accounts had not been properly kept, and the people had not been accustomed to pay with regularity, and hence some indulgence had to be shown to them. There is much room for improvement here. It is satisfactory that not only have all the old debts which existed when the State came under direct management been paid off, but Rs. 5,000, or half of the sum of Rs. 10,000, which was borrowed at a moderate rate of interest for their liquidation in addition.

18. The death of the Maharajah of Mohurbhunj during the year from small-pox has been already noticed. Almost every member of his family was attacked by the disease; but they all recovered, with the exception of the Maharani and her sister. Besides Mohurbhunj Proper, the State possesses zemindaries in Balasore and Midnapore; those in the former district are small and are under the General Manager of the State. The zemindari of Nyabasan in Midnapore, is, however, an extensive and important one, and it has been

decided to leave it under the Collector of Midnapore, at least until settlements have been concluded and a rent-roll prepared. The Superintendent remarks—

"I cannot close this short review of the Mohurbhunj State without expressing my sincere regret at the untimely death of Maharajah Krishna Chunder Bhunj Deo. By building roads and founding schools, he did much to improve his State. His princely donation of Rs. 20,000 for the perpetuation of the Ravenshaw College, his donation of Rs. 5,000 to the Balasore Pilgrim Hospital, and his liberal gifts for scholarships, will cause his memory to be held in respect throughout the Province."

In these remarks the Lieutenant-Governor entirely concurs. The Maharajah was a liberal and enlightened Chief, and his death is much to be deplored.

19. The Lieutenant-Governor has perused with great satisfaction the remarks made by the Superintendent on the administration of the Atmullick State. This is one of the poorest and most sparsely populated of the Tributary Mehals; but notwithstanding the smallness of the means at his disposal, the Rajah manages to carry on the administration of it successfully. He is described as being active, intelligent and industrious; and as he personally supervises every department, his people are happy and contented. Considering how small his income is, it is no slight praise that the Superintendent bestows, when he speaks of the Rajah as one of the best in the Tributary Mehals. Mr. Rivers Thompson desires that an expression of his great satisfaction may be conveyed to the Rajah at his maintaining the high character as an administrator which he has all along borne.

20. The unsatisfactory state of affairs in the Mehal of Boad was noticed in the Report for 1881-82. In the Resolution on that Report, the Lieutenant-Governor hoped that the Chief had, by the time the remarks were recorded, acted upon the Superintendent's advice and appointed an efficient Dewan in place of the officer who was holding that appointment when the report was written. It now appears that he had not done so. He subsequently, however, applied to the Superintendent for a Dewan, and a suitable officer has been nominated. Now that all possible compunctions on the part of the Rajah to the appointment of a new man have been removed by the death of the old Dewan, the Lieutenant-Governor trusts that the Chief will accept the Superintendent's nomination and appoint the officer whom he has suggested. It is satisfactory to learn that, although a new Dewan was not appointed, there has been an improvement in the administration; the Rajah took more interest in the work; there were fewer complaints against the administration; and work was disposed of with less delay. The Lieutenant-Governor trusts that the improvement may continue, and that the Rajah will also gradually pay off the debts in which he is still involved.

21. The change of managers in Duspulla has already been alluded to; since the interchange of managers the administration in this State has worked smoothly. The Rajah is still involved in debt to the amount of above Rs. 11,000. The Superintendent states, however, that he has agreed to set aside the income from a part of the killah, amounting to Rs. 2,542 per annum, for the purpose of clearing himself; and if this arrangement is persevered in, and no fresh debts are contracted, the State should be free from encumbrances in less than five years.

22. Out of a demand of Rs. 23,119 in Hindole, Rs. 22,935 were collected during the year, only the small balance of Rs. 184 being unrealized at its close. This speaks well for the management, when it is found at the same time that the people appear to be contented, and that complaints are much less frequent than formerly. The Rajah, though said to be well disposed, is not well educated, and much advantage has been gained from the assistance and advice of his sheristadar, who is, it is stated, a man of probity, and is apparently, judging from results, a good man of business.

23. The report concerning Keonjhar is again most satisfactory, and the Lieutenant-Governor learns with much pleasure that the Maharajah still continues to administer his State in a just and liberal manner. The relations which exist between him and his people are all that could be desired. Important criminal and civil cases are heard by the Maharajah personally, the criminal cases being disposed of by him, unless it is necessary to commit them, in which case they are finally disposed of by the Superintendent. The postal line kept up by the Maharajah between Keonjhar and Bhuddruck is said to be very slow, and

the runners under little or no control. The Superintendent has suggested to the Maharajah the desirability of either making over the line to the Imperial Postal Department, paying any deficit till the line can pay itself, or of making it over to be included in the Gurjhat post. The Lieutenant-Governor will await a further report on the subject after the Superintendent has received a reply from the Maharajah. The Maharajah should not postpone his intention of establishing a dispensary. The value of such an institution would be great.

24. The report regarding the state of affairs in Nilgiri is far from satisfactory. It is stated that the Rajah, though intelligent, is an unscrupulous and exacting landlord, and hence complaints of oppression are by no means of rare occurrence. The services of Baboo Bholanath Das, a Sub-Inspector of Schools, have recently been lent to the Rajah. His services as Dewan will, it may be hoped, tend to the establishment of a more effective administration, and of a more cordial relationship between the Rajah and his people. A disturbance has recently arisen in the State, owing to the Rajah having adopted a son of the late Chief of Mohurbhunj, to the exclusion of a son of his own brother, whom he, it is alleged, had previously adopted. The necessary orders regarding the course to be adopted for the restoration of tranquillity have been issued by the Superintendent to the Collector of Pooree as *ex-officio* Assistant Superintendent of the Tributary Mehals. The Lieutenant-Governor will await a further report regarding these disturbances; he will also be glad to know whether there is any improvement in disposing of cases without the delay which the Superintendent thinks has hitherto taken place in the administration of justice.

25. The report is very full of information, and the thanks of Government are due to Mr. Smith for the care and completeness with which it has been prepared. The Assistant Superintendent, Baboo Nunda Kishore Das, who, during the year, was offered, but declined, the managership of the Mohurbhunj State, has continued to maintain his former high character, and the Lieutenant-Governor has perused with satisfaction the Superintendent's remarks in paragraphs 456 to 470 of his report, on the other officers employed under him in the administration of the Tributary Mehals.

ORDER.—Ordered that a copy of the above Resolution be forwarded to the Superintendent of the Tributary States of Orissa for information and guidance.

Ordered also that a copy of the Report, together with a copy of the Resolution, be forwarded to the Government of India in the Foreign Department, for information.

Ordered also that a copy of the remarks regarding the conduct of the officers engaged in the administration of the States during the year be forwarded to the Appointment Department of this Office for information.

Ordered also that a copy of the Resolution be published in the *Calcutta Gazette*.

By order of the Lieutenant-Governor of Bengal,

F. B. PEACOCK,

Secretary to the Government of Bengal.

**RESOLUTION ON THE REPORT OF THE BOARD OF REVENUE ON THE
ADMINISTRATION OF THE STAMP DEPARTMENT FOR THE
YEAR 1882-83.**

STAMPS.

Darjeeling, the 20th September 1883.

RESOLUTION.

READ—

The Report on the Administration of the Stamp Department for the year 1882-83.

Read also—

The Report for the year 1881-82, and the Resolution recorded upon it.

The Acts under which the stamp revenue of the year was levied were, as in 1881-82, the Indian Stamp Act I of 1879 and the Court Fees Act VII of 1870. No change was introduced into either of these during the year, but the rules under both the Acts were modified in certain important points, and effect has been given in several particulars to the wishes of the mercantile community and the general public. The year under review witnessed the introduction of a new arrangement for impressing, by a coloured impression, with one anna duty, the skeleton forms of a variety of important documents, including promissory notes payable on demand, brokers' notes, delivery orders, shipping orders, proxies, receipts, cheques, and other documents requiring a stamp duty of one anna. The new scheme has proved highly popular with the public of Calcutta, where it is in force, and the establishment and machinery originally provided for the purpose have proved inadequate to the demands upon them. The Collector of Calcutta reports that, during the months of January and February 1883, no less than 157,055 document forms were presented to be stamped; while on one occasion the numbers reached the enormous figure of 27,500 in a single day. Arrangements have been made to enable the Collector to keep pace with the demands of the public, and to improve the quality of the die now in use, concerning which complaints have been received. The proposal to which reference was made in the Resolution recorded last year, for introducing the Madras system of defacing impressed labels by a coloured date impression, was developed during the year under review, and a scheme has been proposed by the Superintendent of Stamps for stamping and defacing, by a single process, the instruments on which adhesive labels have to be affixed and defaced by the Collector under the rules of the Stamp Act. This plan has not been fully explained, and, when it is to be considered, it must be separately submitted. Meanwhile, no change can be made during the currency of the contract with Messrs. De la Rue and Co., which will only expire with the close of 1891.

2. Various changes and improvements in minor points of detail were also introduced in the working of the Department during the year under review. The Head Assistant to the Collector of Stamp Revenue, Calcutta, has been empowered to perform the duty, hitherto imposed upon the Collector himself, of initialing and countersigning documents stamped by him under Rule 10 of the Stamp Rules. Provision has been made for the writing on impressed sheets bearing the word "hundi" of promissory notes drawn or made in British India and chargeable with a duty of six, ten, or twelve annas. The rule which relates to the use of foreign bill stamps has been modified so as to make it applicable to bills-of-exchange, cheques, and promissory notes, drawn or made out of British India and chargeable with a duty of more than one anna. A new rule has also been issued legalising the combined use of an impressed sheet and an adhesive share-transfer stamp, when any instrument of transfer of shares in a company or association is written on an impressed sheet, and the value impressed upon it is subsequently, in consequence of a rise in the market value of such shares, found to fall short of the amount of duty chargeable under the Act. The change which is embodied in this rule was introduced at the instance of Messrs. Schene, Kilburn and Co., and will remove a serious source of inconvenience to the mercantile public.

3. An important change was introduced by Government order No. 1733, dated 16th June 1882, by which foreign bills-of-lading, i.e. bills-of-lading executed out of British India and relating to property to be delivered in British India, were exempted from payment of stamp duty. This modification in the law has occasioned a considerable falling off in the stamp revenue under the head of impressed labels, but has afforded a large measure of relief to foreign shippers. Copies and extracts from baptismal marriage and burial registers have also, in certain cases, been exempted from stamp duty.

4. In addition to those mentioned above, certain other proposals for modifications in the rules under the stamp laws engaged the attention of the Government during the year. Among these was the proposal made by the Famine Commissioners to reduce the rates of stamp duty on awards by arbitrators. An examination of the records of the civil and revenue courts, however, showed that the higher rates levied under the Stamp Act I of 1879 on these awards, when the property involved was of higher value than Rs. 100, have had no apparent effect in discouraging recourse to arbitration. Arbitration is not popular in Bengal, and there are no signs that it is likely to become so. The Lieutenant-Governor accordingly declined to recommend any change in the law in this respect. Another proposal, which originally emanated from the Government of the Punjab, had for its object the reduction of the rates of duty leviable in cases of partition of revenue-paying estates. On enquiry by the Board of Revenue, it was found that so far were such partitions from being discouraged by the present state of the law, that it had been found necessary to consider whether specific restrictions should not be imposed on the right to demand partition, where the Government revenue on the whole estate was below a certain amount. The particular measures also which the Punjab Revenue authorities proposed to adopt had reference only to temporarily-settled provinces, and were inapplicable to Bengal. The Government of India were informed accordingly. A suggestion was made to Government by the Board of Revenue, and also independently by the District Judge of Sarun, that the opportunity of amending the Court Fees Act should be taken to render stamps necessary on written statements filed by defendants in civil suits under section 110 of the Code of Civil Procedure. It appeared that, on the strength of a ruling of the Bombay High Court, the practice which had formerly prevailed of stamping such statements was being discontinued, and danger was apprehended to the revenue from judicial stamps. The Lieutenant-Governor, however, was of opinion that the provisions of the law, which permitted the filing of such documents on plain paper, were intentional, and were based on the analogy of those clauses which allowed a defendant to make a verbal defence instead of filing a written statement. Mr. Rivers Thompson considered it undesirable to increase the cost of litigation in this direction, and he therefore declined to submit any proposals for a change in the law to the Government of India.

5. A ruling has been given, based on an opinion expressed by the Advocate-General, who was consulted for the purpose, to the effect that a power-of-attorney executed jointly by a number of persons, which empowers the agent to perform on behalf of the executants certain acts in respect of which their interests are separate and distinct, is an instrument comprising or relating to several distinct matters under section 7 of the Indian Stamp Act, and requires as many stamps as there are separate and distinct powers given under it. This ruling is of considerable importance from a revenue point of view, and is clearly in accordance with equity. On the application of Messrs. Reinhold and Co., a relaxation has been permitted of the rule as to the allowance for stamps used for a bill-of-exchange, &c., which has been spoiled or rendered useless. Previously it had been necessary to produce before the Collector another completed or duly stamped bill-of-exchange identical with the spoiled bill in every particular, except in the correction of the error or omission by which it had been spoiled or rendered useless. Under the new rule, however, it will henceforth be sufficient to satisfy the Collector by evidence that a fresh set of bills-of-exchange has been executed in each case, provided that application for renewal is made within ten working days from the date of the bill-of-exchange in respect of which the renewal of the stamp is required.

6. The financial results of the administration of the Stamp Department during the year, so far as the figures available to the Board would show, are given in the following table:—

YEAR.	Stamps under Act I of 1879.			Court-fee stamps under Act VII of 1870.			TOTAL.		
	Receipts.	Refunds and other charges.	Net revenue.	Receipts.	Refunds and other charges.	Net revenue.	Receipts.	Charges.	Net revenue.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1879-80	38,01,063	1,45,554	36,55,509	79,81,338	2,36,471	77,44,867	1,07,84,690	3,82,025	1,04,02,665
1880-81	38,37,000	1,47,371	36,89,629	81,62,216	2,07,515	79,54,701	1,14,99,216	4,94,885	1,10,04,330
1881-82	32,39,172	1,81,053	30,58,119	61,55,465	3,27,141	58,28,324	1,18,01,637	5,30,107	1,12,71,530
1882-83	35,23,200	1,02,279	34,20,921	87,01,713	2,45,998	84,55,715	1,20,23,922	5,39,102	1,14,84,820
1883-84	33,66,540	1,49,720	32,16,820	88,64,070	2,45,998	86,18,072	1,22,13,510	3,92,718	1,18,20,792

The gross revenue collected under the two Acts, I of 1879 and VII of 1870, during the year under review, was Rs. 1,22,13,510 against Rs. 1,20,23,922 in the previous year, giving an increase of Rs. 1,89,588. The increase was contributed by both classes of stamps—Rs. 36,631 by general stamps, and Rs. 1,52,957 by court-fee stamps. In both cases the receipts exceeded those of any previous year. The decrease in charges shown in the figures given by the Board is only nominal, as the charges on account of stamp paper supplied from the central stores has still to be adjusted. This charge amounted to Rs. 1,36,294 in 1880-81, and to Rs. 1,52,959 in 1881-82, and it is not probable that the final figures will show any reduction at all. The Comptroller-General will be asked to arrange that the amount to be debited on account of stamp paper supplied from the central stores may in future be communicated in time for incorporation in the Board's report.

7. The following table shows the gross collections during the past two years from the sales of the different descriptions of stamps under the heads of judicial and non-judicial respectively:—

YEARS.	SALES OF NON-JUDICIAL STAMPS OR STAMPS USED UNDER THE INDIAN STAMP ACT.										SALES OF JUDICIAL STAMPS OR STAMPS USED UNDER THE COURT FEE ACT.				
	Impressed sheets, including certificates stamps, customs and salt bond forms, and Public Works Department contract and tender forms.	Impressed labels.	Receipt or revenue stamps.	Share-transfer stamps.	Foreign bill stamps.	Hundi or bills-of-exchange stamps.	Notarial stamps.	Advocate, valued, and attorney stamps.	Impressed one anna stamps for cheques, bills, &c.	Total of non-judicial stamps.	Adhesive court-fee stamps.	Stamps for copies.	Total of court-fee stamps.	Total of both kinds of stamps.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1881-82	22,03,238	7,08,900	2,10,440	5,170	34,036	92,018	1,300	6,300	32,58,303	81,80,740	3,67,875	83,48,615	1,14,00,618		
1882-83	22,04,088	6,37,100	1,77,940	44,678	36,676	93,219	1,334	9,323	32,96,941	83,07,003	3,95,449	86,02,451	1,19,03,393		
Increase	60,850	68,200	33,500	29,508	1,540	1,201	1,334	2,023	38,638	41,738	1,87,358	17,783	1,46,036		
Decrease	.....	68,800	66,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase per cent	2.7	.....	.....	7.4	4.5	1.3	11.1	49.7	.....	1.3	1.5	4.8	1.6
Decrease	.....	0.7	15.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

There was an increase in 80 districts, and a decrease in the remainder. The most marked improvement occurred in Backergunge, Rs. 50,568, or 11.5 per cent.; Hooghly, Rs. 45,529, or 17.5 per cent.; Midnapore, Rs. 43,375, or 12.4 per cent.; 24-Pergunnahs, Rs. 39,398, or 7.4 per cent.; and Tipperah, Rs. 35,934, or 9.2 per cent. The most considerable decrease was in Calcutta, where it amounted to Rs. 3,07,658, or 14.5 per cent. In Jessore also there was a large apparent decrease of Rs. 81,936, or 16.9 per cent. This, however, was merely nominal, being due to the loss of two sub-divisions which, with another sub-division from the 24-Pergunnahs, were formed into the new district

of Khulna. The following districts each yielded a revenue exceeding three lakhs of rupees :—

Districts.	Non-judicial stamps.	Court-fees.	Total.
	Rs.	Rs.	Rs.
Calcutta	9,88,805	8,22,229	18,10,534
Mymensingh	1,53,304	4,23,322	5,76,626
Dacca	1,50,677	4,19,445	5,70,122
24-Pergunnahs	86,589	4,80,917	5,67,506
Backergunge	85,214	4,03,823	4,89,037
Tipperah	84,725	3,39,454	4,24,179
Jessore	63,681	3,38,238	4,01,919
Midnapore	73,306	3,19,733	3,93,039
Mozufferpore	96,226	2,59,000	3,55,226
Chittagong	76,420	3,71,534	3,47,954
Nuddea	54,832	2,90,857	3,45,689
Patna	94,264	2,15,977	3,10,241
Hooghly	44,774	3,60,523	3,05,297

Mymensingh, Dacca, and the 24-Pergunnahs, as in former years, come next to Calcutta, each with a revenue exceeding five lakhs. Ten districts yielded more than two lakhs, and ten more than one lakh each. In 12 districts the receipts fell below a lakh of rupees, the lowest on the list, as in former years, being Singbhoom. The incidence of the stamp revenue outside Calcutta, where it amounts to Rs. 4·17 per head of the population, is everywhere small, ranging from Re. ·01 per head in Singbhoom to Re. ·3 in the 24-Pergunnahs, Hooghly, and Noakholly. The general incidence is only 2 annas 11 pies per head, or at the rate of Rs 12-3-8 per 100 of the population.

8. Of non-judicial stamps, by far the most important description is impressed sheets, which yield more than two-thirds of the total revenue collected under the Indian Stamp Act. The gross receipts under this head during 1882-83 amounted to Rs. 22,64,088, against Rs. 22,03,233 in the previous year. The increase amounted to Rs. 60,855, or 2·7 per cent. In 1881-82 there had been a decrease of Rs. 71,849, and the improvement during the year under review has not yet brought the revenue up to that collected in 1880-81, the first year during which the present Act was in force. The increase is small compared with the total amount of the receipts, and the Board do not consider that it can be attributed to any single predominating cause. Various causes operating in different districts have produced fluctuations of a strictly local character, the general tendency being upwards. There was an increase in 26 districts, and a decrease in 18. The increase was absolutely most considerable in Chumparun (Rs. 17,558), Mozufferpore (Rs. 15,684), Sarun (Rs. 10,167), and Rungpore (Rs. 9,658), and relatively in Chumparun, (70·6 per cent.), Hooghly (24·8 per cent.), Mozufferpore (20·8 per cent.), and Sarun (20·4 per cent.). In three districts only did the decrease exceed Rs. 10,000. These were Calcutta, with a fall of Rs. 28,916, or 17·4 per cent., Jessore, with Rs. 14,578, or 19 per cent., and Dacca, with Rs. 13,477, or 9·4 per cent. The decrease in Jessore, which is shared in a less degree by the 24-Pergunnahs, is more than covered by the receipts of Khulna. The improvement in Chumparun is due to the sale of a large number of 8-anna stamps to the managers of the Motihari, Farkolia, Pipra, and Rajpore factories for the renewal of indigo agreements. In Mozufferpore the receipts were enhanced by the sale of some stamps of high values. In the previous year a large decrease had been reported from Sarun, which was very imperfectly explained. The district has now recovered from the depression of 1881-82, and the rebound is ascribed to improvement in business, especially in the latter part of the year, and to an increased number of mortgages of lands and bonds. In Rungpore the increase was due to the settlement of the estate of a Mahomedan gentleman named Enayatullah Chowdhry, for which a number of stamps of high value were required. In Patna, where the increase amounted to Rs. 8,707, or 12 per cent., it is stated that "the petty shareholders, in order to avoid the risk and trouble which they are often put to for non-payment of Government revenue and cesses by their co-sharers, have adopted the course of disposing of their shares either by sale or mortgage." The Lieutenant-

Governor finds it difficult to believe that this cause can have operated so extensively as to produce an appreciable effect on the stamp revenue of the district.

9. The decrease in Calcutta is attributed by the Collector to the orders of the Government of India, referred to in paragraph 2 above, by which the use of adhesive labels was permitted for all transfers of shares, whether made by endorsement or otherwise. The loss is said to be only apparent, and to have been more than compensated for by a corresponding increase under the head of "adhesive share transfer stamps." In Dacca, it is explained that the receipts in 1881-82 were abnormally high, owing to the existence of disputes among the families of two large landholders, which necessitated the drawing up of documents requiring stamps of high values. The absence of any such cause in the year under review reduced the stamp receipts to their normal level. In Nuddea, where there has been a decrease for three years in succession, the fall is attributed partly to the low prevailing prices of agricultural produce consequent on a continued recurrence of good harvests, and partly to the stagnation of business of all kinds due to the wide prevalence of epidemic fever. The Commissioner of Orissa is of opinion that the explanation of the decrease in Cuttack is to be found in the fact that the import trade, which is mostly carried on with borrowed capital, is in a languishing condition. According to the Customs returns, the value of the imports has fallen from Rs. 8,47,160 to Rs. 1,73,961, and these figures certainly seem to bear out the Commissioner's opinion. The fluctuations in the other districts were nowhere considerable in themselves, and were due to local and accidental causes which are of no general interest.

10. The receipts from impressed labels fell during 1882-83 from Rs. 7,05,909 to Rs. 6,37,109, or by Rs. 68,800. The causes of decrease assigned by the Collector of Calcutta, where alone this kind of stamps is in use, are (1) the unusually large receipts in the preceding year; (2) the exemption of foreign bills-of-lading from stamp duty; and (3) the reduced duty which, in consequence of an opinion expressed by the Advocate-General, is now levied on conveyances of tea estates formed on leasehold lands. The falling off occasioned by the last-named cause, which only operated from the 17th to the 31st March 1883, amounted to upwards of Rs. 10,000, and the Board have recommended an amendment of the law. The matter will receive the attention of Government.

11. From 1878-79 to 1881-82, inclusive, there was a steady increase of revenue from one-anna revenue stamps, commonly known as receipt stamps; but in the year under review there has been an apparent decrease of Rs. 32,500, or 15.4 per cent., the realizations being Rs. 1,77,940 against Rs. 2,10,440 in the previous year. The decrease occurred in 11 districts, viz. Calcutta, Hazaribagh, Bogra, Jessore, Rungpore, Patna, Gya, Bhagulpore, Burdwan, Darjeeling, and Lohardugga. By far the greater part, however, occurred in Calcutta, where it amounted to Rs. 37,832. In only two other districts did it exceed Rs. 500. It is explained that the falling off in Calcutta is for the most part only nominal, the place of the adhesive receipt stamps being taken by the impressed one-anna duty referred to in paragraph 1 above. A sum of Rs. 35,578 must be set-off on this account against the diminished direct receipts, and if this be done, there will be a real increase of Rs. 3,078, or 1.4 per cent. on the whole. The Board "are not satisfied with the results obtained under this head, as the instructions issued from time to time to the local officers on this subject, and the steps taken by the Board to acquaint the public with the provisions of the law requiring the use of one-anna receipt stamps, and to afford greater facilities for obtaining them, have not been attended with the increase that might have been expected." There can be little doubt that the law is still systematically evaded in the mofussil; and the practice appears to be common to nearly all the districts in Eastern Bengal. The Commissioner of Dacca, in whose division the receipts are out of proportion to the well known prosperity of the people, observes: "I believe these persons (traders and mahajans) systematically evade the law. A stamp is put on only when the document is to be used in court. There is a tacit agreement among such traders and bankers not to use stamped receipts. Zemindars, also, when they give receipts to talukdars and other tenure-holders, do not use receipt stamps."

These remarks explain the chief reason of the inadequate revenue collected from this source, and the direction in which the remedy is to be sought. The rules which have been drawn up by the Collector of the 24-Pergunnahs for the guidance of his subordinates appear to be simple and well-considered, and the Lieutenant-Governor will be glad if the Board will consider the advisability of issuing instructions of a similar kind for the guidance of all district officers. The suggestion of the Commissioner to create a detective establishment under the direction of a Sub-Deputy Collector, or even of a special Deputy Collector, to overhaul and examine the books of all mercantile firms and traders, does not commend itself to the Lieutenant-Governor. The proceedings would be inquisitorial, and the evils to be remedied are less than would result from the exercise of such powers by a subordinate department. The proposal to adopt a unified stamp for both postal and revenue purposes, and to allow two half-anna stamps to be used to make up the duty of one-anna, to which reference was made last year, is still under the consideration of the Government of India. Since the close of the year under review, however, arrangements have been made for the sale of receipt stamps at all post-offices in the interior, on commission, by sub and branch post-masters, and it is hoped that the increased facilities thus afforded to the public for obtaining them will do much to reduce the temptation to defraud the revenue.

12. The other descriptions of non-judicial stamps are of relatively minor importance. Under foreign bill stamps there was an increase of Rs. 1,540, and under "advocate, vakeel, and attorney stamps" of Rs. 3,025. The sales of share-transfer stamps increased from Rs. 5,170 to Rs. 44,672, or by 765 per cent. This was, as already mentioned, due to the orders of the Government of India by which the use of this description of stamps was extended to transfers of shares of all public companies and associations. Notarial stamps, the use of which was extended to 13 districts where they had not hitherto been employed, yielded a revenue of Rs. 2,534, being Rs. 1,334 in excess of that of the previous year. The sale proceeds of hundi stamps amounted to Rs. 93,219 against Rs. 92,015 in the previous year. The Board consider that the increase that has been obtained under this head, though small, is satisfactory. It is anticipated that, while the money-order system will increase in popularity for the transmission of small sums, hundis will continue to be used for larger transactions, more especially by those who seek the advantage of paying the money after a fixed date.

13. The sales of the four kinds of judicial stamps during the last two years are shown in the following table:—

DESCRIPTION OF STAMPS.	SALES IN		Increase.	Decrease.
	1881-82.	1882-83.		
	Rs.	Rs.	Rs.	Rs.
Court-fee stamps	78,88,194	80,33,986	1,45,792	.....
High Court service stamps	6,000	7,000	1,000	.....
Calcutta Small Cause Court stamps	2,86,546	2,67,007	.....	19,539
Total	81,80,740	83,07,993	1,46,792	19,539
Stamps for copies	3,67,675	3,85,458	17,783	.....
Total of all kinds	85,48,415	86,93,451	1,64,575	19,539

The gross receipts have increased from Rs. 85,48,415 to Rs. 86,93,451. There was a net increase in 31 districts, ranging from 18 per cent. in Singbloom to 4 per cent. in the Sonthal Pergunnahs, and a decrease in 14 districts. The general causes of the increase are said to be increased litigation, and the institution of suits of high value, to which must be added the collection of process fees in the Road Cess Department by means of court-fees, instead of in cash, and the levy of 8 annas searching-fees in civil and criminal courts under orders of the High Court. A variety of other causes are assigned in different districts, but, with the exception of the above-named, none appear to be of general application. The aggregate amount of increase was highest

in the 24-Pergunnahs (Rs. 44,704), Backergunge (Rs. 43,437), Mymensingh (Rs. 40,417), Hooghly (Rs. 36,689), Tipperah (Rs. 35,535), and Midnapore (Rs. 34,991). The greater part of the decrease of Rs. 3,95,212 occurred in Calcutta, where it was as high as Rs. 2,15,907, or 20·8 per cent. The Collector is unable to account satisfactorily for this large falling off, but he considers that the probable causes are the non-payment of large sums of probate duty, such as occurred in 1881-82, the transfer from the High Court to the Small Cause Court of cases of the values ranging from Rs. 1,000 to Rs. 2,000, and the decline in the number of suits instituted in the latter court consequent on the introduction of the new procedure. There was a large nominal decrease in Jessore of Rs. 66,804, due to the transfer of two sub-divisions to Khulna. In Patna also there was a decrease of Rs. 27,540, of which no special explanation has been given.

14. The following statement shows the number of cases in which deficient stamp duty and penalty were levied during each of the past five years by civil and revenue courts, with the amount realised in each case:—

YEARS.	NUMBER OF CASES.		AMOUNT OF DUTY AND PENALTY REALIZED.		TOTAL.	
	Civil courts.	Revenue officers.	By civil courts.	By revenue officers.	Cases.	Amount.
			Rs.	Rs.		Rs.
1878-79	776	1,148	9,446	9,471	1,924	18,917
1879-80	910	1,269	7,743	12,209	2,179	20,952
1880-81	1,062	1,598	10,945	19,841	2,660	30,786
1881-82	1,283	2,215	10,711	38,530	3,497	49,242
1882-83	1,760	2,314	13,415	26,906	4,074	40,321
Increase in 1882-83, as compared with 1881-82.	477	900	2,704	.....	586	.....
Decrease in 1882-83, as compared with 1881-82.	.....	.....	.....	11,864	.....	9,161

The Lieutenant-Governor is glad to observe that the observations made in the Resolution recorded last year on this subject appear to have resulted in greater attention being paid both by Revenue and Judicial Officers to the duty of enforcing compliance with the stamp laws. In most of the divisions the results, both in the civil and revenue courts, were decidedly in advance of those of previous years. The total amount of duty and penalty realized during the year was, it is true, less than that realized in 1881-82 by Rs. 11,864, but this is due chiefly to the extraordinarily heavy penalty and duty levied in one case in the Dacca district during the previous year. In the Patna, Rajshahye, and Chittagong Divisions, however, sufficient attention does not seem to be paid to the subject, although in Pubna and Julpigoree there was some improvement over the figures for the previous year. In Tipperah and Noakholly the apparent negligence of the civil courts is in strong contrast to the high degree of success obtained by the revenue officers. In Chittagong the number of cases in which duty and penalty were realized by revenue courts fell from 366 to 141, and of this no explanation has been given by the Collector. The falling off of 128 cases in the 24-Pergunnahs was due to the fact that in 1881-82 a large number of loan transactions recorded in a khatta-book of a money-lender which bore no stamp were discovered by the Joint-Magistrate of the district, and subsequently impounded. The Sub-Registrars of Soopool and Muddehpura, in the district of Bhagulpore, it is said, did not impound a single document during the year under review; and the Board have properly brought the matter to the notice of the Inspector-General of Registration.

15. The number of prosecutions for infringement of the provisions of the Indian Stamp Act amounted to only 625 against 927 in the previous year; 774 persons were brought to trial, of whom 516 were convicted and 95 acquitted. Fines, aggregating Rs. 5,849, were realized, and Rs. 70-8 were disbursed as rewards to informers. In addition to this, a sum of Rs. 788 was paid as rewards by the Collector of Calcutta in a single series of cases. In Bankoora no less than 119 prosecutions were instituted against one individual for unstamped receipts for amounts exceeding Rs. 20. The heavy falling off in Calcutta is said to be nominal, as the offences committed by 151 persons in respect of 498 documents were by permission compounded on payment of Rs. 4,349-2

as fines. Taking together the cases in which stamp duty and penalty were realized by courts, and those in which prosecutions were instituted, the Board are of opinion that improvement has been manifested in Bankoora, Midnapore, Dinagepore, Pubna, Julpigoree. Balasore, Furreedpore, Tipperah, Patna, Southal Pergunnahs, Purneah, and Maldah, while unfavourable results were obtained in Beerbhoom, Nuddea, Jessore, Manbhoom, Shahabad, Dacca, Chit-tagong, Sarun, and Chumparun. The proposal submitted by the Board for the grant to ministerial officers of rewards for bringing to light cases in which documents had not been stamped in accordance with the law was not approved by the Government of India. Departmental rules to enforce this duty upon the ministerial officers of civil and revenue courts are now under the consideration of the Government.

16. The thanks of the Lieutenant-Governor are due to the Board for their careful administration of the Stamp Department throughout the year. The names of the officers who have been specially mentioned as deserving of credit for their work in this Department will be communicated to the Appointment Department of this Government.

ORDER.—Ordered that a copy of the above Resolution, with a copy of the Report, be submitted to the Government of India, in the Department of Finance and Commerce, for information.

Ordered also that a copy of the Resolution be forwarded to the Board of Revenue for information.

By order of the Lieutenant-Governor of Bengal,

COLMAN MACAULAY,

Secretary to the Government of Bengal.

RESOLUTION ON THE GENERAL ADMINISTRATION REPORT OF THE
RAJSHAHYE AND COOCH BEHAR DIVISION FOR THE
YEAR 1882-83.

GENERAL DEPARTMENT—MISCELLANEOUS.

Calcutta, the 22nd September 1883.

RESOLUTION.

READ—

The General Administration Report of the Commissioner of the Rajshahye and Cooch Behar Division for the year 1882-83.

The report under consideration has been submitted with punctuality by Lord Ulick Browne, who, with the exception of a short period in the cold season, during which Mr. Metcalfe officiated for him, held charge of the Rajshahye and Cooch Behar Division throughout the year. The Commissioner brings to notice the incomplete state in which the report of the Collector of Rungpore was furnished to him, whole sections being in some instances omitted. Punctuality cannot be accepted as an excuse for incompleteness, and no credit attaches to the early despatch of an imperfect report.

2. *Tours.*—The tours made by the Commissioner and by all district officers subordinate to him were of sufficient length, and the time spent on tour appears to have been well employed. It is to be regretted that, with the exception of Mr. Hare, who spent over a month in the interior of the Rajshahye district, and of the Joint-Magistrate of Darjeeling, the circumstances of which district are to some extent exceptional, none of the Joint-Magistrates employed at head-quarter stations were enabled to see anything of the interior of their districts. The Lieutenant-Governor is aware that difficulty is found in arranging for the tours of Joint-Magistrates; districts cannot well be left without a covenanted officer at head-quarters, and it is generally inexpedient to curtail the tours of district officers in order that their assistants may travel in the interior. It is believed, however, that something more could be done than is done at present. The object of Joint-Magistrates' tours is the acquisition of mofussil experience by those officers, and a more complete inspection of districts than is possible if the whole duty of inspection falls on one officer. It too often happens that the portions of districts lying nearest to head-quarters, *i.e.* the sudder sub-divisions, at present receive least inspection, and it is in these portions, which, for the purpose of experience, are as valuable as more remote regions, that Joint-Magistrates on tour could apparently be best employed. The distances to be travelled are seldom long, and would rarely necessitate a protracted absence. Arrangements should be made for Joint-Magistrates to inspect sudder sub-divisions, and if such inspections cannot be made in the cold weather months, they should be spread over the seasons of the year at which district officers are ordinarily at head-quarters.

The time spent in the interior of their districts by sub-divisional officers was sufficient in all cases, except that of the Deputy Collector of Alipur, in the Julpigoree district. The shortness of this officer's tour, which lasted only 56 days, needs explanation, for which the Commissioner should call. This sub-division is situated in a part of the country where personal intercourse with the people is especially necessary. The Deputy Collector in charge of the Nowgong sub-division was absent from his head-quarters for 56 days only; but, as the sub-division was only opened on the 21st November, the tour made was, under the circumstances, not inadequate. The sub-division should, however, be carefully inspected during the present year.

3. *Weather and crops.*—In the Dinagepore, Rajshahye, Pubna, and Bogra districts the rainfall was considerably below the average, and in Rungpore, where the deficiency was less marked, the rain was unseasonable. The result appeared in inferior crops. In Rajshahye, and in the Panchbibi thana of Bogra, rice failed to some extent; in Dinagepore the water-supply was insufficient for the steeping of jute; and in Pubna, where jute was sufficiently steeped, the result was only obtained by using, and thereby contaminating, the drinking supply. In Rungpore the drought from July to September, followed by excessive rain in October, injured the *aman* rice crop in the south of the district. In Julpigoree, though tobacco and mustard were injured by the

heavy rain in October, the year was not unfavourable. In Darjeeling, where the year was remarkable for the excessive cold and heavy snow which fell in January, the crops were satisfactory. The most noticeable feature in the agricultural history of the division during the year is the increase in the cultivation of jute, which was largely extended both in Rajshahye and Pubna. The abundance of jute led to a fall in price, but the crop was so large that the Commissioner finds it difficult to believe that the cultivators suffered from low prices. The increase of sugarcane cultivation too in many parts of the division is remarkable. It is reported now to be in places eight times larger than it was a few years ago. The use of the improved sugarcane mills throughout the Rajshahye and Pubna districts is noticeable. The introduction of Messrs. Thomson and Mylne's mills on the estate of the Tahirpur ward in Rajshahye is said to have reduced by one-third the cost of the manufacture of sugar, and to have given a great impetus to the industry on that and the neighbouring estates. In Julpigoree alone, of the districts of the division, is the primitive native system adhered to.

The low price of ganja and the high price of jute in 1881-82 led to an increased cultivation of the latter and to a contracted cultivation of the former crop in Rajshahye, Dinagepore, and Bogra, the result being a decline from 2,862 to 1,992 in the number of bigahs under ganja and from 2,301 to 1,739 in the number of cultivators. The gross outturn, however, was proportionately greater than in the preceding year.

4. *Public health and material condition of the people.*—The Commissioner has omitted from his report the statistics of mortality given by the district officers, owing to his conviction of their untrustworthiness. The figures hitherto given may have been very inadequate, but as they afford some basis of comparison, with reference either to the actual mortality or to the energy of the reporting agency, the Lieutenant-Governor would prefer that they should be given in future, care being taken to indicate the extent of their inaccuracy, as far as this is possible. The effect of special efforts made in the Pubna district to improve the mortuary statistics is said to have been good and lasting; and what has been done in Pubna can be done elsewhere. With the exception of the districts of Dinagepore, parts of Rungpore, and of the Darjeeling Terai, the year under review was more unhealthy than its predecessor. In the southern portion of Rungpore the condition of the people was somewhat depressed; but in Dinagepore a decrease took place in the mortality from fever, which is attributed by the Civil Medical Officer and Collector to the improvements in drainage effected by the District Road Cess Committee. Fevers were more fatal than usual in Rajshahye, Pubna, and Bogra, and in the two former districts considerable mortality took place from cholera, in consequence mainly of the deficiency of good drinking water, due in Pubna to the employment of almost all the available water for the steeping of jute. In the presence of such a fact, the question of a proper water-supply in seasons of scanty rainfall deserves the consideration of the district officers. In Julpigoree the year is reported to have been as healthy as the normal climate of the district and the unsanitary habits of the population permitted. The health of the Darjeeling Terai shewed some improvement, which is attributed, with apparent correctness by the Commissioner, to the clearances in progress in the tract; and in the hills themselves the condition of the people was satisfactory. With regard to the hills the Commissioner writes:—

In the hills there was a good deal of small-pox, but generally of a mild type. The Deputy Commissioner has been told that in Sikkim and Thibet this mild form was so rife that people went out of their way to catch it in order to protect themselves from a severe form in the future. The Deputy Commissioner observes that it would be well if we could induce the Sikkim Maharajah to send into Darjeeling a few persons to be trained in vaccination. He agreed to do this in his interview with Sir George Campbell in the year 1873, but no pupil has yet come in. The unprotected state of the population on our north and east borders, and their liability to severe outbreaks of small-pox, is a standing danger to this district. Mr. Wace thinks it would be worth while to offer to pay the pupils liberally; for, if we once got vaccination well established in Sikkim, it would soon get across into Thibet if not into Bhootan. With the exception of this general, but mild outbreak of small-pox, the health of the Hill Tracts was satisfactory. The lines in which the coolies on tea-gardens live are well situated; most planters enforce the primary rules of sanitation and see to the water-supply; and when their coolies do fall ill, their liberality in medicines might well be taken as an example in some of the Government dispensaries.

The fact stated at the commencement of this extract would appear to indicate that the people of Sikkim and its neighbourhood are disposed to avail themselves of such means of protection as are at their disposal; and if this is the case, it is probable that vaccination would not encounter any serious obstacles among them. The Commissioner's remarks will be referred to the Surgeon-General, who should consider, in communication with the local officers, the best means of protecting the Darjeeling hills against small-pox. In all other districts of the division vaccination has made considerable progress without any serious objection from the people.

The material condition of the people, with few exceptions, was satisfactory. If the rice failed in places, the price of labour was high, and the railway and other works gave plenty of employment to the labouring classes.

5. *Emigration and immigration.*—As noticed in previous years, no emigration, calling for remark, takes place from the division, but the immigration of persons seeking temporary employment is considerable. The clearances by a colony of Garos effected in the Rungpore district were continued, and one of the *sardars* succeeded in inducing some more of his countrymen to settle in the district. In many other parts of the division, where waste lands are available, similar settlements appear to have been effected, and systematic efforts in the same direction might be advantageously made in the Government and Wards estates where land is abundant and cultivators scarce. Notably the Jeypore estate in Bogra is fit for such an experiment.

6. *Nekmurd Fair.*—This fair took place as usual in April, but appears to have been less numerously attended than in previous years. The business done also was less brisk, so far as can be ascertained from the statistics which are reproduced below—

DESCRIPTION OF ANIMALS AND ARTICLES SOLD.	Number sold.		Total prices realized.		Average prices per head.		REMARKS.
	1881.	1882.	1881.	1882.	1881.	1882.	
Elephants	160	147	Rs. 1,00,000	Rs. 1,47,000	Rs. 1,000	1,000	The figures originally given for the sale of local cattle are believed to be untrustworthy and have been omitted by the Commissioner.
Camels	243	147	12,120	9,320	50	50	
Oxen and cows	.....	8,950	.....	1,71,380	.....	19
Huffaloes	450	545	8,250	7,350	18	13	
Local cattle	23,700	4,00,000	16	* Only fin-tailed. † Includes country sheep.
Horses	40	3	3,000	300	75	100	
Horses (superior)	150	20	4,000	1,450	25	50	
Do (small)	2,000	1,184	40,000	29,000	20	25	
Sheep	50*	424†	750	4,528	15	10	‡ Information was not furnished by the police.
Piece-goods	.....	.....	21,800	18,788	.....	.....
Miscellaneous goods	.....	.....	1,90,000	1,04,604	.....	.....
Salt	.....	.....	425	.....‡	.....	.....

The sanitary and police arrangements appear from the result to have been satisfactory.

7. *Prices of food and labour.*—Notwithstanding the inferior harvest, the selling price of rice, though higher than in 1881-82, remained below the average of the last five years, the lowest mean price for the whole year being 28 seers 2 chittacks per rupee, which obtained in Bogra, and the highest, exclusive of the hills, 21 seers 1 chittack in Julpigoree. The prices of pulses and Indian-corn remained virtually unchanged. The Lieutenant-Governor is glad to observe that the remarks recorded by him last year, regarding the preparation of statistical tables, have been followed by an improvement in the statement given of the prices of labour. The division is one which employs much foreign labour, and wages are consequently high in almost all districts, and especially in the Darjeeling hills, where labour is inferior in quality and generally difficult to obtain. It is satisfactory to find that the labourers in the hill tea-gardens are "excellently treated." To control the coolies and dandiwalas of Darjeeling, a special Act was passed during the year. The Commissioner expects that it will operate towards ensuring orderly conduct on the part of

the classes to which it extends, and not towards a reduction of their legitimate earnings. The subject should be specially noticed in next year's report.

8. *Manufactures.*—As in previous years, jute bags and cloth, sugar and molasses and tea were the principal industries of the division. All districts manufacture jute bags and cloth for local consumption; and from Pubna, Dinagepore, and Julpigoree there is a large export trade in these articles. The cheapness of bags in Calcutta caused a falling off in December in the demand for gunny-bags from Dinagepore. The principal place of manufacture is Seraj-gunge, where no less than 2,000 adult workpeople and 250 children are employed in the mills, which are well managed. Molasses is exported from Dinagepore, Bogra, and Rungpore, and is manufactured for home consumption in Rajshahye. In the latter district the annual manufacture of raw sugar is estimated at 3,00,000 maunds. From statistics recently collected, it appears that about 11 lakhs of maunds of raw sugar are manufactured in the division as a whole.

The following table shews the progress of the tea industry during the last three years in Julpigoree and Darjeeling:—

DISTRICTS.	Number of Gardens.			AREA UNDER CULTIVATION IN ACRES.						Gross yield in pounds.			Average yield per acre from mature plants in pounds.		
				Mature plant.			Immature plant.								
	1880.	1881.	1882.	1880.	1881.	1882.	1880.	1881.	1882.	1880.	1881.	1882.	1880.	1881.	1882.
Jalpigoree ...	47	53	60	3,383	3,682	4,070	2,255	3,071	3,598	917,705	1,027,116	1,865,801	241	278	390
Darjeeling ...	155	164	165	21,661	25,105	26,716	6,706	8,410	9,954	5,100,314	6,590,445	8,080,293	238	262	302
Total ...	202	207	225	25,043	28,787	31,386	8,961	11,481	13,552	5,978,079	7,623,561	9,946,094	239.5	270	350.5

Unfortunately, however, the profits were not in proportion to the increased outturn, and it appears probable that the falling off was due to the same cause that has more than once led to similar results in Assam—over-production of inferior tea. On this head the Commissioner writes—

Mr. Wace believes that the good prices of the season of 1881 tempted agents and managers to go in for a large outturn. The season was all in favour of such a policy, flushes being very rapid. The result was coarse leaf. The supply met in the home market a very large import of cheap China tea and large stocks in hand. The result was naturally a heavy fall in prices, which were 30 to 50 per cent. below those of 1881. Shipments to America were very unsuccessful, and the Australian market got more than it wanted, with the result of a fall in price.

The outturn of cinchona from the Government factory again shewed an increase, the crop yielding 396,980lbs of bark against 341,570lbs in the previous year, and the manufacture of febrifuge being 10,363lbs. The issues were smaller than in 1881-82, owing, it is believed, to the greater healthiness of the year under review. The following extract from the Deputy Commissioner's report shews the progress made by private plantations:—

The success of the Government plantations has given an impetus to private enterprise in cinchona cultivation, although no advantage has been taken of the offer made by Government last year to sell the yellow bark plantation on condition of the purchaser manufacturing sulphate of quinine. The tract of land taken up by Messrs. Schoene, Kilburn and Co. east of the Teesta has been opened out, 15 miles of road have been made, 350 acres have been cleared for cultivation, and 32 acres planted. The outturn of the Darjeeling Tea and Cinchona Association was again rather below that of the previous year, being 24,000lbs. The Land Mortgage Bank is opening out small plantations on three of its gardens, the total area planted out being a little over 100 acres.

9. *Trade and commerce.*—The report this year gives tables shewing the principal exports and imports of the various districts of the division. Rice is grown and exported from all districts except Darjeeling—Dinagepore, Rajshahye, and Bogra supplying the largest quantities. All districts export jute in an unmanufactured state, and gunny-bags and jute cloth are also largely exported. The most important exports remaining are tea from Darjeeling, tobacco from Rungpore, ganja and silk from Rajshahye, and molasses from Pubna. The estimated export of tea from the Darjeeling district was about 8,080,293lbs. and from the Julpigoree district 1,865,801lbs. The chief imports are piece-goods

and salt into all districts, and twist and sugar mainly into Pubna. The import of jute for manufacture into Serajgunge is estimated at 38,00,000 maunds against 25,00,000 maunds in the previous year. The supply appears, however, to have been in excess of the demand, as the price fell from about Rs. 4 in 1881-82 to Rs. 2-2 in March 1883. The principal articles of export to Bhutan from Julpigoree are European piece-goods, betel-nuts, tobacco, and rice; fuel, oranges, blankets, musk, and ponies are the chief imports. The import of piece-goods, salt, and twist into Darjeeling has considerably increased, as has that of live-stock and farm produce from Nepal, and of Indian-corn from Sikkim. The figures given for imports from Sikkim are, however, believed to be untrustworthy.

10. *State of public feeling.*—As in previous years, the mass of the people took little or no interest in public affairs or public measures. The license tax, the chaukidari tax, and the Arms Act are accepted facts, which have ceased to cause remark, and of which the inconvenience has been reduced to a minimum. With the educated classes and the Europeans, however, the year has been one of considerable excitement. The scheme of local self-government was much discussed in the earlier part of the year, but it is said that with the novelty the interest displayed in the subject has to a great extent died out. The bulk of the people are agriculturists and entirely indifferent to the measure, whose principal advocates were the pleaders, mooktears, and clerks, resident at the sudder stations of districts. The zemindars as a whole were lukewarm. The other question on which public opinion has been excited in a manner which cannot be sufficiently deplored has been the Criminal Procedure Code Amendment Bill, which has, in the opinion of the district officers, brought about a distinct separation and a very lamentable soreness between Europeans and natives. In Darjeeling, where the Bengali element is absent, where the interests of the hill races are largely bound up with those of the Europeans, and where the Bill, if passed, is never likely to have any effect, the feeling of irritation is entirely onesided, and is believed by the Deputy Commissioner to be due solely to sympathy with Europeans in other parts of India, and to a conviction that the principle of the measure will affect the security of English capital in the country.

11. *Public press.*—Two new vernacular papers were started during the year at Pubna, and one by the Scotch Mission at Darjeeling. The *Hindu Banjika* and the *Rajshahi Patrika*, published at Rajshahye, and the *Dik Prakas*, of Rungpore, are favourably mentioned for the loyalty of their tone. The last-named publication is issued under the supervision of Baboo Mahima Rajan Ray Chaudhuri of Kakina, to whom it does credit. Regarding the remaining papers, the Commissioner reports that they "have of course contained such articles as were to be expected on the extension of Local Self-Government and the Criminal Procedure Bill."

12. *Administrative changes.*—The effect of the changes made in the administration of the division during the year is not mentioned in the report, though the changes themselves are enumerated. They were the amalgamation of the municipal and regular police in all districts; the establishment of a sub-division at Nowgong in Rajshahye; the transfer of the head-quarters of the Bagdogra sub-division to Nilphamari on the Northern Bengal Railway, and certain alterations in the powers exercised in civil cases by the Small Cause Court of Darjeeling and by the Sub-Divisional Officer of Kurseong. A report should be submitted on the proposal to alter the boundaries of the Nowgong sub-division, so as to bring the tract in which ganja is grown wholly within it.

13. *Police and crime.*—With the exception of Julpigoree and Rungpore, an increase in the number of cognizable cases reported took place in every district, and the total for the division rose from 10,480 to 11,681. The increase, however, was mainly due to nuisance cases, of which 850 more were instituted than in the preceding year. The percentage of cases declared

Rungpore	... 12.4 per cent.
Pubna	... 10.6 "
Dinapore	... 6.5 "
Julpigoree	... 5.3 "
Rajshahye	... 5.2 "
Bogra	... 3.5 "
Darjeeling	... 3.7 "

false fell in all districts except Dinapore and Rungpore. The figures given in the margin would seem to indicate an absence of uniformity in the procedure under which cases are declared false. The matter is one which is receiving the attention of the Inspector-General of Police. Rungpore

has taken the place of Pubna as the least criminal district in the division, the proportion of true cases to population being only 1 in 1,267. Pubna and Dinagepore, where the proportion is 1 to 952 and 1 to 869 respectively, shew a creditable freedom from crime. In Darjeeling the proportion, which was last year 1 to 107 persons, is now 1 to 78. This ratio is very high, and calls for explanation. In respect of the proportion of convictions to persons placed on trial, Darjeeling stands best, with 82.5 per cent., while Rungpore and Pubna, with 54.6 per cent. and 48.8 per cent., give the worse results. The low ratio of true cases to population, the large proportion of cases declared false, and the small percentage of convictions in these two districts, would seem to indicate laxity on the part of the police. Taking the division as a whole, the percentage of convictions has risen from 60.5 in 1881 to 62.3 in 1882, the improvement being apparently the result rather of increased activity in nuisance cases than of growing success in the detection of crime.

The only two serious cases of riot which took place during the year occurred in the Pubna district, and the parties in both were brought to justice. A very slight increase is reported in serious offences against the person; and serious offences against property fell off considerably. Generally, the greater activity and vigilance of the chowkeydars is commended throughout the division. The following description of the state of crime in the Pubna district deserves record:—

Mr. Barrow left the following remarks on crime in Pubna:—"Under this head, no doubt, should be discussed the general question of the safety of property and person, and to discuss them for an agricultural area might embrace some consideration of the relation of landlord and tenant. Of crime proper against property, the police can give a favourable account. The figures detailed show that offences of this class are by no means serious, and consequently that the criminal classes are held in check; but when crime to do with agrarian matters is considered, the exact opposite is the case. Here the police are literally nowhere; it may be said that they have no footing, or, as the natives would say, no *dukkul* to withstand this kind of crime. Coming from Behar the difference struck me very much. There the agrarian problem is fairly simple. The ryots are usually on one side and the zemindar on the other. Two bodies of ryots may fight for land; but then again the combination is simple and the quarrel easily understood and the law generally easily applied. The offence may be compared to that between a strong stream and a rushing current with eddies and whirlpools. Here the interests are manifold and complicated. Putnidars, jotadars, durjotadars, and ryots combine, dissolve, and recombine like the objects in a kaleidoscope. The result is violence, deceit and fraud."

Referring to the riots that occasionally occur in the district, Mr. Barrow says—"I myself in the sudder heard all the police reports, and was so able to direct what is so important—the first action of the police. Mr. Farrer at Sorajgunge vigorously, and on the whole successfully, dealt with this spirit of turbulence; still, however, the spirit of violence pervades the district and manifests itself in various forms in the police administration. For instance, a ryot cannot leave the estate of one zemindar for that of another without fear of aggression. In consequence he usually puts in a petition to the Magistrate to be protected.

One great cause of disturbance during this year, as during last, has been the breaking up and transfer of the large zemindary of Azim Chowdry. Many preventive measures had to be taken, and in spite of them occurred the very serious riot with loss of life when his house had to be taken possession of under the Civil Court's decree."

A decrease from 8,036 to 7,729 took place in the number of non-cognizable cases. The Benches of Honorary Magistrates continued, as in previous years, to do good work, and no less than 2,622 cases were decided by this agency.

14. *Civil justice.*—The total number of civil suits instituted in the division during the year was 41,910 against 40,144 in 1881, the value of the property in dispute rising in the same period from Rs. 40,29,574 to Rs. 45,38,188. With the exception of a decline in the value of suits for money and moveables, which was for the most part confined to Dinagepore, there was an increase alike in the number and value of all classes of suits, and, speaking generally, the increase was common to all districts of the division. The explanation is probably the same in all cases, namely that the partial failure of the rice crop caused creditors to press for the recovery of their dues. The marked falling off in the value of suits for money and moveables in Dinagepore is explained by the large amount in litigation in that district in 1881 in consequence of the failure of two banking firms. Including suits pending at the close of

1881, the total number of civil cases determined during the year was 42,405 of which 15,095, or 35·6, were withdrawn, compromised or confessed, and 18,260, or 43·06 per cent., were decided *ex parte*, only 9,050, or 21·3 per cent., being contested.

15. *Land and land revenue.*—Owing to corrections made in the *taujih* of the Rajshahye district, an apparent decrease, from 5,473 to 5,433 estates, on the divisional rent-roll took place during the year. In reality 10 estates were added by alluvion to the divisional revenue-roll, and thus the revenue demand rose from Rs. 51,32,423 to Rs. 52,08,984. The collections were generally satisfactory, being especially good in Rajshahye, where they amounted to 99·39 per cent. of the demand. In Bagra and Julpigorce the collections were least successful, being only 94·91 per cent. and 88·8 per cent. of the demand respectively. The arrear demand in these districts is due almost exclusively from estates under direct management. In Darjeeling a marked improvement has taken place, the percentage realized being 96·8 against 77·9 in 1881. The advance is no doubt due to the settlement of the dispute between the Government and the *joldars*, to which allusion was made last year. The Commissioner has submitted a careful report regarding the land revenue administration of his division, but the subject is one which will be more appropriately dealt with by the Government when the Land Revenue Administration Report of the Board of Revenue is under consideration.

16. *Relations between landlords and tenants.*—On the whole the year has been characterized by a satisfactory absence of overt quarrels between landlords and tenants in all districts, but it is to be feared that the report given by the Collector of Pubna “that there is an utter want of sympathy between the landlords and their tenants” is true for the most part of the whole division. The following remarks made by the Sub-Divisional Officer of Serajunge on this head are worthy of consideration, and give what is probably an accurate account of the state of affairs in a large portion of the province:—

The attitude of zemindars and ryots towards each other is very much the same as in previous years. This is nevertheless a difficult question to comprehend, as there seems to be such a remarkable mixture of hostility and sympathy in their dealing with each other. Generally, however, the zemindars insist upon having their pound of flesh, and it is the ryots who shew generosity. It is not at all unusual to find the ryots voluntarily contributing a cess of so much in each rupee of their rent to enable the zemindar to pay off debts which extravagance or mismanagement have led him to contract. A remarkable case of this kind came to my notice during the year, where the ryots made an attempt, quite voluntarily, to save their zemindar, although they must have known that he was hopelessly involved and that their contributions would be lost. This zemindar had been engaged with the Sandhys of Salop in litigation over a certain question since the year 1827. The final order was given by the Judicial Committee of the Privy Council in the year 1881, when the Sandhys obtained a decree for about five lakhs, with a set-off of about one and a half lakh of rupees, leaving a balance of three lakhs or thereabouts in their favour. In this case I had an enquiry made as to whether any coercion was being used towards the ryots, but found that their help was voluntarily given. On the other hand, the ryots know perfectly well how completely they can resist, by combining together, any claim made by the zemindar which they are not disposed to admit, and attempts to enhance their rent are frequently met in this way. In such cases the zemindar is generally compelled to retreat from his position in the end, as he cannot afford the expense of enhancement suits, and cannot live when his rents are stopped. This course, however, is taken by the ryot with some reluctance, as, since the time of the Pubna riots, it has been associated in their minds with defeat and loss in the end, and is often the cause of their being involved in criminal cases and sent to jail. During the years which followed those disturbances, the zemindars made large enhancements of the rent, as the ryots were cowed by their defeat, and therefore submitted more easily. Latterly they have become more independent again, and find that they can effect their object by quiet and passive resistance. There can be no doubt that the spirit of independence among them is becoming stronger each year, and that they are becoming more disposed to insist upon their rights. Generally speaking, they distrust their zemindars, and the feeling between the two is full of hostility. The Tagore zemindars manage their estate very well, and I think that the feelings of their ryots towards them are much less full of hostility; but this is perhaps the only exception.

The cost of management of an estate seems to fall almost entirely on the ryots, as the ostensible pay of the *amlas* is ridiculously low, and the latter make it up by extorting contributions from the ryots on every possible ground and pretext. The zemindars thus cannot be held to have performed their part of the contract in which they entered when the permanent settlement was made, as far as the interests and welfare of their ryots are considered. The prosperity which the latter do enjoy is entirely due to their own industry, intelligence, and independence of spirit, and their zemindars spend all their income—sometimes

a good deal more—on idle display or senseless litigation. There are some exceptions among them, but this is the rule.

It is noticeable that in the Rungpore district, where it is said "land is plentiful, but ryots few," the relations between the landlord and the tenant are entirely peaceable.

17. *Excise*.—Notwithstanding a decrease from 2,469 to 2,305 in the number of licenses issued for the vend of intoxicating liquors and drugs, the revenue derived from excise has increased from Rs. 5,90,291 to Rs. 6,04,211, the increase being most marked in the Darjeeling district. In the district of Rungpore a considerable decline took place in the amount of revenue realized. The articles of which the consumption rose to the greatest extent were country spirits and ganja, while the revenue from opium fell largely. Minor fluctuations took place in respect of other articles. The increase in the sale of country spirits was most marked in the districts of Julpigoree and Darjeeling, and was due, especially in the case of Darjeeling, to the opening out of the district by the railway, and to the large number of foreign residents and visitors. The Commissioner, in reviewing the result of the three years in which the outstill system has been in force, has arrived at the conclusion that it has done much to check illicit distillation, and has had little, if any, effect in increasing drinking. Whether drinking has increased in the division seems doubtful; but if it has so increased, the fact, in the Commissioner's opinion, is due to the increased prosperity of the working classes, and to the presence of large numbers of low caste Hindus from other parts of India who come to work for hire, and among whom drinking has always been prevalent. It is satisfactory that, with a considerable increase in the revenue, the consumption of ganja is much less than it used to be.

18. *Stamps*.—The high sales of stamps which took place in the year 1881-82 were slightly exceeded in that under review, the net revenue from this source (Rs. 10,31,544) shewing an increase of Rs. 1,775. Sales rose in Bogra, Rungpore, Julpigoree, and Darjeeling, and fell off in the remaining districts. In Dinagepore, Rajshahye, Rungpore, and Darjeeling an increase took place in the sales of impressed stamps, in consequence, in the two first districts, of the settlement of large estates. In Rajshahye the bad harvest is said to have led to an increased number of bonds on loan transactions, and in Darjeeling the increase is attributed to the general development of the district. The decline in the sales of court-fee stamps was confined to Dinagepore and Rajshahye, and was due, in both cases, to exceptionally high sales in the previous year.

19. *Railway and other public works*.—Regarding the extension of the Northern Bengal State Railway to Dinagepore, and the survey which is now in progress for its extension to the Ganges, *via* Purneah, the Collector of Dinagepore writes as follows:—

"My predecessor has remarked in his last year's report" (quoted in paragraph 58 of my report of 1881-82) "upon the effect of the Northern Bengal Railway on the district. I consider that the Ganges extension will be no less important in its beneficial effects. Hitherto in this district a bumper crop was looked upon by the tenants as only a lesser evil than the total failure, as prices were entirely ruled by the mahajans and there was no means of getting rid of the surplus produce. The new extension will tap a rich and prosperous country, and will enable the jute sown in that area to find a ready market. At present the only mode of exit this produce has is by boat down the Mahananda river; but this river has of late years been completely closed to traffic to boats of even the smallest tonnage after the month of January, and it often happens that large quantities of jute remain locked up in the hands of the growers and the small traders until the next rise of the river. A large quantity was so locked up last year."

Statistics given in the report shew an increase from 152,714 tons to 190,117 tons in the amount of goods carried by the Northern Bengal State Railway, and from 630 tons to 3,004 in those carried by the Kaunia and Dharla Tramway. Figures are not given for the Darjeeling-Himalayan Railway, but the receipts have increased from Rs. 2,60,649 in 1881 to Rs. 3,60,679 in 1882. The improvement in the working of the hill line have been very marked. The amount spent by the various Road Cess Committees on original works and repairs during the year was Rs. 4,17,700 out of an estimated expenditure of Rs. 4,44,022. In all districts except Dinagepore a sufficient proportion of the available funds was devoted to village roads, and all the Committees apparently did their best with the means at their disposal.

20. *Education.*—The number of schools open at the beginning of the year under review was 2,121, attended by 63,172 pupils, had risen at its close to 2,757, attended by 76,556 pupils, giving an increase of 29·9 per cent. in the number of schools and of 21·2 per cent. in the number of pupils. The proportion of pupils who succeeded in satisfying the standards prescribed by the Educational Department was low, except in the case of the normal schools and schools for special instruction, amounting in the aggregate to only 37·3 per cent. The Commissioner considers this result less unsatisfactory than it would at first sight appear, because the number of pupils presenting themselves for examination was higher than in previous years, and is taken by him as indicating an increased desire on the part of the inhabitants for the education of their children. This view is probably correct; but the initial difficulty of getting the children to come to school having been overcome, careful supervision ought to lead to a more satisfactory state of things as regards the knowledge imparted. The percentage of boys of school-going age to the supposed total number of boys in each district varied from 16·7 in Rajshahye to 10·5 in Julpigoree. The total number of girls receiving education rose from 1,352 to 1,937. The details of the educational development of the division during the year will be considered in connection with the annual education report.

21. *Working of Committees.*—A satisfactory account is given by the Commissioner of the working of the various Committees of the division, with the exception of those at Pubna, where the members are said to be ready and independent enough in respect of discussion, but to evince an inclination to shirk work when possible. The Lieutenant-Governor trusts that this tendency may become less strong as the responsibility of the individual members increases, under an extended scheme of local self-government. The energy and good work of the Committees of Serajgunge, Julpigoree, and Darjeeling, where the European element is strong, are commended.

22. *Wards.*—The total number of estates under the management of the Court of Wards at the close of the year was 17, against 18 at its commencement—one estate, Hazratpur, having been released during the year. The following are the most important estates in the division, having each a current demand of over half a lakh of rupees:—Churaman (Rs. 1,01,624) and Sankarpur (Rs. 53,238) in Dinagepore, Tahirpur Junior Branch (Rs. 70,051) in Rajshahye, and the Chaklaját (Rs. 3,05,861) in Julpigoree. It is gratifying to observe that the arrear demand, which in the case of all except Sankarpur, was very heavy at the commencement of the year, was reduced in the Churaman and Tahirpur estates and the Chaklaját by 76, 71, and 73 per cent. respectively. In the Chaklaját estate alone was the balance heavy at the close of the year. The progress made by the wards in their education is described as generally satisfactory.

23. *Conduct of zemindars.*—On the whole, the conduct of the zemindars of the division was satisfactory. Only one serious case of misconduct came to light—that of Azim Chaudhuri in the Pubna riot case, with which the Lieutenant-Governor has already dealt. Vigilant arrangements were, however, necessary to prevent a breach of the peace, in consequence of the disputes as to the ownership of the Marcha Diara in Rajshahye. The conduct of the Serajgunge zemindars is, the Lieutenant-Governor is glad to observe, more favourably described than in former years. Raja Pramatha Nath Ray of Dighapatia and Kumar Sasi Shekareswar Ray are commended, and the latter is said to have interested himself in the welfare of his tenants and to have established a sort of agricultural association for the supply of seeds of a superior kind.

24. *Character of officers.*—The Commissioner's remarks on this head will be considered in the Appointment Department. The officers most favourably mentioned are, among the Collectors, Messrs. Wace and Norman; among the Joint-Magistrates, Messrs. Hare and Farrer; and among the Deputy Collectors Baboos Hari Mohan Chandra and Mohendra Nath Bhattacharjya and Tarun Chunder Sircar. The Lieutenant-Governor thanks Lord Ulick Browne for his careful administration of an important charge and for his full report.

By order of the Lieutenant-Governor of Bengal,

A. P. MACDONNELL,

Offg. Secretary to the Govt. of Bengal.

BENGAL NAGPORE RAILWAY.

Dated Calcutta, the 24th September 1883.

THE following is published for general information.

By order of the Lieutenant-Governor of Bengal,

G. F. E. S. NEILL, Major, M.S.C.,

Under-Secy to the Govt. of Bengal,
P. W. Dept.

Extract paragraph 2 from a letter No. 735 R.C., dated 18th August 1883, from the Secretary to the Government of India, Public Works Department, to the Secretary to the Government of Bengal, Public Works Department.

PARA. 2.—His Honor the Lieutenant-Governor will observe that the

	Miles.	Estimates. Rs.	cost of the project, according to the final estimates, will be as per margin, including the cost of the open line from Nandgaon to Nagpur and its conversion to the broad gauge, but with due allowance for metre-gauge materials and stock capable of being utilized by Government elsewhere.
Sitarampore to Bilaspore	365½	3,00,00,000	
Bilaspore to Nandgaon	114	93,00,000	
Nandgaon to Nagpur	148	1,86,32,000	
Total	627½	5,29,32,000	

No. 2948R, dated Calcutta, the 28th July 1883.

From—The Secretary to the Govt. of Bengal, Public Works Dept., Railway,
To—The Secretary to the Government of India, Public Works Department.

I AM directed to forward copy of a report by Mr. Spring, Executive Engineer, Nagpore Railway Surveys, with a map and estimates of the probable cost of the direct line of railway, 162 miles, from Howrah to Dugni—a point near Chyebassa on the line from Sitarampore to Bilaspore—which was surveyed and located last season by the officers under Mr. Parker's orders

2. The estimates framed by Mr. Spring have been examined by the Chief Engineer, who has an intimate knowledge of the country between Howrah and Midnapore, traversed by the three great rivers Damoodah, Roopnarain, and Cossye. His note and a revised abstract estimate is herewith sent. The cost of bridging these rivers and the spill therefrom will be Rs. 65,10,000, instead of Rs. 87,46,000, as estimated by Mr. Spring. The Chief Engineer has included a sum of ten lakhs of rupees for terminal buildings at Howrah, for which a quite insufficient allowance had been made: other differences are due to alterations in establishment and contingent charges.

3. The estimate for the line from Howrah to Dugni, 162 miles *via* Midnapore, as revised by the Chief Engineer, is Rs. 2,18,16,187 (A); while the cost of the line from Sitarampore to Dugni, 95 miles, is Rs. 80,14,942 (B), shewing an excess of capital required for construction, if the direct line be adopted, of Rs. 1,38,01,245.

4. There would, however, be a saving of distance by the direct line of 71 miles as follows:—

	Miles.
Howrah to Sitarampore, East Indian Railway ..	188
Sitarampore to Dugni ..	95
	283
Howrah to Dugni <i>via</i> Midnapore ..	162
Difference ..	71

The longer line would, on the other hand, have the advantage of cheap coal procurable at Sitarampore and elsewhere, which would materially assist in keeping down working expenses. Time would also be saved in the construction of 95 miles through easy country, as against 162 miles through the heavily flooded lands of the direct line, in which also two exceptionally large tidal rivers have to be crossed by bridges with very deep foundations in bad soil.

5. Mr. Parker's estimate of the line from Sitarampore to Bilaspore is also forwarded herewith. It has been prepared in detail from the sections and surveys of the finally located line, and may be relied on. The total cost is Rs. 2,98,96,970 for 365½ miles. It is from this estimate that the cost of the 95 miles from Sitarampore to Dugni has been taken in abstract estimate which accompanies the Chief Engineer's note.

6. Apart from the considerations above alluded to—(1) less outlay of capital, and (2) more rapid completion of the railway—the Lieutenant-Governor has already, on other grounds,* advocated the construction of the line from Sitarampore *via* Purulia, in preference to that direct from Howrah *via* Midnapore. The former has no tidal rivers to cross; would have about 67 miles less of railway to construct, and will open up a tract of country at present but ill-provided with means of cheap carriage, and, as a protective measure, will be of great importance. The Midnapore district, on the other hand, is well-protected by the Midnapore canal, which last year carried 329,000 passengers and 138,000 tons of goods by steamers and boats, besides irrigating 100,000 acres of land. Beyond Midnapore to Chyebassa the country is mountainous and difficult, very sparsely populated at present, and with none of the advantages for traffic which the route *via* Sitarampore to Bilaspore promises to develop. In this, too, the supply of coal and of iron and steel from the Bengal Iron Works, now temporarily under Government management, gives large prospective advantages, and it may be accepted that, with the cheapness of coal and labour, the working expenses of this line would be much less than the 50 per cent. ordinarily calculated upon the gross earnings. The Government of India has already received a copy of Mr. Risley's report on the trade of Chota Nagpore, as affecting the interests of the proposed railway from Sitarampore to the Central Provinces, and though in dealing with a primitive tract of country, the extent of the existing trade may not be very large, the prospect, and especially from the development of its mineral resources, is full of encouragement. It has been estimated that the line would return a profit of about 4 per cent. upon the capital outlay. The Lieutenant-Governor desires me to express the hope that early orders may now issue for the commencement of this line.

Note by the Chief Engineer on Mr. Spring's report and estimate for the alternative route for the Bengal-Nagpore Railway direct line from Howrah to Dugni (Chyebassa), dated 25th July 1883.

MR. SPRING estimates the cost of this line at Rs. 2,32,38,000, but he has fallen into error regarding the discharges of the rivers Cossye, Roopnarain, and Damoodah, which are as follow:—

	C. ft.		C. ft. per second.
* Darkasser	160,000	Cossye, above Midnapore	180,000
Belye	90,000	Roopnarain	390,000*
Spill from Cossye	150,000	Damoodah	350,000
Total	390,000		

The Cossye at Panchkoora can only carry 80,000 cubic feet per second, the difference, viz. 150,000 cubic feet per second, is thrown off mostly at the Pilaspai, mile 380.

Mr. Spring allows for the waterway of the Cossye, above Midnapore, only 800 feet of bridging, which is inadequate to carry 180,000 cubic feet per second: at least 1,200 feet must be given.

At Pilaspai he has allowed 300 lineal feet in the estimate for major bridging, and about 400 in the minor bridge estimates; this also is inadequate. In order to pass the 150,000 cubic feet, which spills over the country in the neighbourhood of the Pilaspai khall, at least 3,000 feet of flood opening must be allowed; the estimate must therefore be increased by the cost of 2,600 lineal feet of minor bridging.

At the Roopnarain it will be impossible to obtain a width of 5,500 feet as allowed in Mr. Spring's estimate: not more than 2,000 feet can be got: and the estimate for this bridge will therefore be very greatly reduced.

At the Damoodah I would allow a width of 1,500 feet, which can be obtained. Mr.

	Length.	Depth.	Velocity.	Discharge.
* Roopnarain	2,000 × 20	× 6	=	240,000
Damoodah	1,500 × 16	× 6	=	156,000
Total				396,000

† 7,800 × 10 × 6

= 365,000

Spring has taken the width at 1,250 feet. These two bridges will carry 375,000* cubic feet per second, but the flood discharge is 740,000; the difference, 365,000,† must therefore be provided for by constructing additional flood openings. For this purpose 7,800 lineal feet will be necessary, to which must be added 2,100 lineal feet for local drainage, &c., making in

all 9,400 feet in place of 14,100 allowed by Mr. Spring from mile 402 to mile 432.

Comparison of the estimates will stand as follows :—
Major Bridging.

LOCALITY.	CHIEF ENGINEER.			MR. SPRING.			Difference.
	Lineal feet of water-way.	Rate.	Cost.	Lineal feet of water-way.	Rate.	Cost.	
		Rs.	Rs.		Rs.	Rs.	Rs.
Cossye ... mile 351	1,200	450	5,40,000	800	450	3,52,000	+ 1,88,000
Roopnarain ...	2,000	600	12,00,000	5,500	600	33,00,000	-21,00,000
Damoodah ...	1,600	600	9,60,000	1,250	600	7,50,000	+ 1,90,000
			26,40,000			44,02,000	-17,62,000

Minor Bridging.

Mile 375-396	3,000	350	10,50,000	400	.....	1,14,000	+ 9,36,000
" 403-423	9,40	300	28,20,000	14,100	.....	42,30,000	-14,10,000
			38,70,000			43,44,000	-4,74,000

There will therefore be a reduction in the cost of major bridging of Rs. 17,62,000 and of minor bridges of Rs. 4,74,000, making the total difference Rs. 22,36,000. No sufficient allowance has been made in Mr. Spring's estimate for terminal works at Howrah, and even if a portion of the East Indian Railway buildings are utilized for that purpose, they will have to be paid for. I think at least ten lakhs must be added on this account; the estimate will then stand at Rs. 14,21,813 less than Mr. Spring's estimate, or at a total of Rs. 2,18,16,187.

H. C. LEVINGE,
Chief Engineer, Bengal.

No. 767, dated Hazaribagh, the 3rd July 1883.

From—W. H. PARKER, Esq., M.I.C.E., Engineer-in-Chief, Bengal and Nagpore Railway,

To—The Secretary to the Government of Bengal, Public Works Department.

I HAVE the honour to forward abstract estimate of the probable cost of the Bengal and Nagpore Railway from Sitarampore to Bilaspore, as called for in your No. 434T—R of 18th May 1883.

2. The estimate amounts to Rs. 2,98,96,970, for a length of 365½ miles. The estimate framed from Mr. Ramsay's sections, and submitted with this office No. 848 of 9th September 1882, was for 367 miles Rs. 2,97,03,121, including land, but no "workshops," which, in the estimate now submitted, amounts to Rs. 1,82,625.

3. The total quantities in earthwork exceed the first estimate by 99 lakhs of cubic feet, value Rs. 54,450. A further excess of Rs. 8,12,042 is due to increase of rates owing to there being more rock in cuttings than originally anticipated, and to the quantities in high embankments being also greater than estimated. For ordinary banks Rs. 4 per 1,000 cubic feet has been estimated, instead of Rs. 3, which is considered rather a low rate. In the third division a tunnel, which it was hoped might be avoided, has been found indispensable at Derva in the Suranda. This tunnel has been estimated for a double line, and is 2,300 feet in length, costing Rs. 4,10,000.

4. As regards actual quantities, there is a decrease of 26,828,422 cubic feet in cuttings, and an increase of 36,749,183 cubic feet in banks. As regards the old estimate, the quantities given are final quantities calculated from the working.

5. In bridge-work the estimate now submitted is Rs. 4,89,917 less than the rough estimate, as some of the larger bridges, such as the Damuda, Cossye, Subarnarikha are found to require less waterway than originally calculated. Each culvert and minor bridge has been estimated, but the important bridges are taken out only at a fixed rate per running foot.

6. There is an increase in the item of ballast, as the former estimate did not provide 10 per cent. for stations. This has been added, and increases the cost per mile from Rs. 3,300 to Rs. 3,790 per mile, and the total cost of this item from Rs. 12,11,100 to Rs. 13,84,298.

7. There is a decrease of Rs. 10,63,228 in permanent-way owing to rate for sleepers being decreased from Rs. 3 to Rs. 1-12, and to more careful calculation of the cost of lead of rails and fastenings to works; the rates for cost of permanent-way at Calcutta are taken as in the rough estimate, but it is calculated that sleepers can be easily obtained at the reduced rate owing to the proximity of the forests.

8. Stations and buildings are increased by Rs. 2,68,099; the number of stations being slightly increased beyond what was originally intended to bring them to a distance of some 12½ miles apart, instead of 15 miles, and rough estimate of cost of each building required is given.

9. Workshops and stores were omitted from original estimate, as it was understood that the line would be worked by East Indian Railway. On reconsideration of the matter, it has been thought best to allow a small sum per mile, Rs. 500, which gives Rs. 1,82,625 as the cost of any district workshops or stores that may be required.

10. The other items of the estimate are affected only by the length of line, rates remaining the same, except in the item preliminary, where the rate has been reduced from Rs. 1,500 per mile to Rs. 1,000, as the estimate for survey and reconnaissance amounts only to Rs. 700 per mile, leaving Rs. 800 per mile available for any future operation that may be found requisite.

11. A comparative statement is attached, shewing in detail the comparative cost of estimate now submitted with the rough estimate, the cost per mile being Rs. 81,583, or 0·8 per cent. more than the less rough estimate which amounted to Rs. 80,935 including land.

BENGAL AND NAGPORE RAILWAY SURVEYS.

Statement of comparative cost between Revised Reconnaissance Estimate and Preliminary Abstract Estimate.

Item.	Reconnaissance revised estimate.	Estimate preliminary, based on actual surveys.	PRESENT ESTIMATE.	
			Increase.	Decrease.
	Rs.	Rs.	Rs.	Rs.
Preliminary ...	5,50,500	3,65,250	.....	1,85,250
Land ...	4,08,700	4,01,775	.....	1,925
Cuttings ...	16,55,584	17,52,850	97,266	.....
Embankments ...	18,01,953	25,71,179	7,69,226	.....
Bridges ...	72,96,860	68,06,943	.....	4,89,917
Tunnels ...	Nil.	4,14,000	4,14,000	.....
Level-crossings ...	73,400	73,050	.....	850
Fencing ...	3,67,000	3,65,250	.....	1,750
Ballast ...	12,11,100	13,84,298	1,73,198	.....
Permanent-way ...	78,42,790	67,79,562	.....	10,63,228
Stations and buildings ...	7,79,875	10,42,974	2,63,099	.....
Station machinery ...	Nil.	1,82,625	1,82,625	.....
Workshop and stores ...	6,00,000	6,00,000	.....	.....
Plant ...	86,70,000	86,25,000	.....	45,000
Rolling-stock ...	21,57,908	22,13,976	56,070	.....
Establishment ...	12,92,453	13,18,238	25,785	.....
Contingencies ...				
Total ...	2,97,03,121	2,98,96,970	1,93,849	17,87,420
Increase in new estimate ...	1,93,849			

BENGAL AND NAGPORE RAILWAY.

General Abstract.

Item.	PARTICULARS.		Amount.	REMARKS
		Rs.	Rs.	
1	Preliminary expenses at Rs. 1,000 per mile	.....	3,65,250	
2	Land at Rs. 1,100 per mile	.....	4,01,775	
3	Construction—			
	(a) Earthwork	43,24,029		
	(b) Bridgework	68,06,943		
	(c) Tunnelling	4,14,000		
			1,15,44,972	
4	Level-crossing at Rs. 200	.....	73,050	
5	Fencing at Rs. 1,000	.....	3,65,250	
6	Ballast	13,84,298		
7	Permanent-way	67,79,562		
			81,63,860	
8	Stations and quarters—			
	(a) Station buildings	3,59,700		
	(b) Machinery	4,20,524		
	(c) Staff quarters	2,62,750		
			10,42,974	
9	Workshops and stores at Rs. 500 per mile	.....	1,82,625	
10	Plant at Rs. 1,650	.....	6,00,000	
11	Rolling-stock at Rs. 10,000	.....	86,25,000	
12	Establishment 10 per cent. on items 1 to 9	.....	22,13,976	
13	Contingencies five per cent. on items 1 to 11	.....	13,18,238	
	Total for 365½ miles	.....	2,98,96,970	
	Or per mile	.....	81,863	

W. H. PARKER, M.I.C.E.,
Engineer-in-Chief.

A.

Abstract of Estimate of the line from Howrah to Dugni (162 miles via Midnapore).

No.	Main head.	No.	Sub-head.	How calculated.	Amount.
					Rs.
I	Preliminary expenses ...	1	Survey expenses ...	At Rs. 1,000 per mile for 162 miles.	1,62,000
		2	Plant.		
		3	Establishment.		
II	Land ...		.....	See estimate ...	8,63,750
III	Construction of line ...	1	Earthwork ...	Ditto ...	20,08,000
		2	Minor bridges and flood openings.	Ditto ...	45,94,900
			Large-bridges ...	Ditto ...	34,29,000
		3	Tunnels ...	Nil ...	...
		4	Level-crossings ...	See estimate ...	26,000
		5	Fencing ...	At Rs. 1,000 per mile ...	1,62,000
		6	Electric telegraph ...	At Rs. 800 per mile ...	1,29,600
IV	Ballast and permanent-way.	1	Ballasting ...	See estimate ...	10,16,000
		2	Sleepers ...	Ditto ...	12,19,000
			Rails, &c., and plate-laying.	At Rs. 16,600 per mile...	23,89,200
V	Stations and buildings ...	1	Stations and offices ...		11,86,000
		2	Workshops and store buildings, &c.	At Rs. 500 per mile ...	81,000
		3	Staff quarters ...	At Rs. 400 per mile ...	64,800
		4	Station machinery ...	Included in stations and offices.	
VI	Plant ...		Includes all sub-heads...	For whole line ...	4,00,000
VII	Rolling-stock ...		Includes everything ...	For whole line, at Rs. 10,000 per mile.	16,20,000
VIII	Establishment ...		.....	10 per cent. on all items except VI and VII.	17,12,625
IX	Contingencies ...		.....	5 per cent. on all except establishment.	9,57,312
					2,18,16,187

B.

Abstract Estimate of the cost of the first 95 miles of the Nappore Railway from Sitarampore to Dugni.

DESCRIPTION.			Quantity.	Rate.	Per	Amount.	Total.
			Miles.			Rs.	Rs.
1.	Preliminary expenses	...	95	1,000	Mile	95,000	
2.	Land ...	...	95	1,100	do.	1,04,500	
3.	Construction—						
	(a) Earthwork	...	.....	.....	.....	11,00,243	
	(b) Bridgework	...	.....	.....	.....	21,28,675	
	(c) Tunneling	...	Nil	.....	.....	.....
4.	Level-crossing	...	95	200	Mile	19,000	
5.	Fencing	...	95	1,000	do.	95,000	
6.	Ballast	...	95	3,790	do.	3,60,050	
7.	Permanent-way	...	.....	.....	.....	16,64,793	
8.	Stations and quarters—						
	(a) Station buildings	...	.....	.....	.....	1,41,800	
	(b) Machinery	...	.....	.....	.....	1,54,828	
	(c) Staff quarters	...	.....	.....	.....	49,616	
9.	Workshops and stores	...	95	500	.....	47,500	
10.	Plant	...	95	1,650	.....	1,56,750	
11.	Rolling-stock	...	95	10,000	.....	9,50,000	
12.	Establishment 10 per cent. on items 1 to 9	...	.....	.....	.....	5,95,900	
13.	Contingencies 5 per cent. on items 1 to 11	...	.....	.....	.....	8,53,287	
							80,14,942

Traffic over the Midnapore Canal during 1882-83.

MONTH.				Number of passengers.	Weight of cargo. Maunds.
				<i>Private Traffic.</i>	
April	1882	...	...	10,599	2,46,942
May	"	...	...	11,170	3,09,994
June	"	...	...	14,489	3,65,953
July	"	...	...	15,080	3,79,094
August	"	...	...	15,083	3,51,901
September	"	...	...	15,978	4,08,442
October	"	...	...	20,807	2,98,367
November	"	...	...	19,093	3,30,316
December	"	...	...	14,526	3,02,576
January	1883	...	...	16,523	3,18,298
February	"	...	...	15,789	2,17,423
March	"	...	...	12,116	3,35,621
Total				181,253	38,64,967
Government Transport Service				147,789	3,758
GRAND TOTAL				329,042	38,68,725

Report on the Calcutta-Midnapore-Chyebassa alternative of the Bengal-Nagpore Railway.

Dated Hazaribagh, the 17th July 1883.

From—F. J. E. SPRING, Esq., Executive Engineer, Hazaribagh,

To—The Engineer-in-Chief, Bengal, Nagpore Railway Surveys.

Submit report.—I have the honour to submit a report upon the Calcutta-Midnapore-Chyebassa alternative of the Bengal-Nagpore Railway.

Route reconnoitered.—In compliance with your instructions, I made a reconnaissance of the route from the junction with the Bilaspore-Sitarampore survey to Midnapore, taking aneroid observations for levels, and measuring waterways. Sufficient information was available from the Canal Department about the remainder of the route between Midnapore and Howrah, for the purpose of this report, to render further reconnaissance unnecessary.

Information hitherto available—Nothing has hitherto been known of the Chyebassa-Midnapore portion of the route. The Midnapore-Calcutta portion is thoroughly well known, and has been levelled over in every direction. No surveys have, it is believed, hitherto been made for crossings for the Damooda and Roopnarain rivers at this portion of their course; but I have now got sections of these rivers, as well as of the Cossye, from the Executive Engineer, Cossye Division, Midnapore.

General direction—Leaving the Bilaspore-Sitarampore route at the 270th mile from Bilaspore, the general direction of the route to be now reported on is as follows:—

Running eastward till the 277th mile, the line bends to the south-east till the Korkai river, an important branch of the Subaurika, is crossed at the 284½ mile near the villages of Dindli and Jagsoli. The general direction of the route is now south-east, and the village of Domjori having been passed on the north side, the Subaurika river is crossed at miles 299½ near the village Chondorekha. The line then passes close to Moholia, and about a mile north-east of Ghatsilla, whence, turning southward, it passes about a mile north-east of Narsingarh, then north of Pira hill to Chakulia. At the 327th mile the Midnapore district is entered, and the route is tolerably straight, and eastward through Jambandi, where at mile 336 the Dholang nullah, a large branch of the Subaurika, is crossed. From Jambandi the line goes east to Midnapore, crossing the Cossye at mile 351, and reaching Midnapore at mile 365. Passing Midnapore close on the north side, the line bends a few degrees to the northward, so as to avoid a great bend of the Cossye; the Pilaspai khal, a broad spill that runs into the Cossye, is crossed at mile 380; thence running a few degrees south, a large nullah or khal, the Durbachata, is avoided, and passed at the 394th mile. At mile 402 the Roopnarain river is reached, and crossed at a point where it is narrowest, about three miles above Kola Ghât, where the Calcutta-Midnapore road crosses. The Damooda river is crossed at mile 406, at a narrow place about three miles up-stream from Mahishreka ghât, where the road crosses. Thence the line turns a few degrees northward, and crossing round outside Howrah enters the terminus, and ends at the 432nd mile from Bilaspore.

The four-mile-to-the-inch map, shewing the route in a broad red line, accompanies this report. A portion of the Bilaspore-Sitarampore route is also shewn on the same map, in a thick dotted line, and a possible alternative south of Midnapore, which possesses no special advantages beyond communication with the navigable canal, is a thin dotted line.

Detailed description of route.—I now proceed to give a detailed description of the result of the reconnaissance.

From mile 270, the junction with the Bilaspore-Sitarampore survey, to mile 284½, the Korkai crossing, a large number of nullahs tributary to the Sanjai and Korkai, are crossed; hence, the country being very rough, it is impossible to follow anything like a contour. Owing to the frequency and depth of the nullahs the gradients will probably be rather up-and-down.

The average banks and cuttings on these 14½ miles will be about 10 feet; the soil is all gravelly clay and easy to work.

There will be the following bridges:—Khorī nullah at mile 270½, 30 feet bridge; Murkum nullah, mile 280, 40 feet bridge, besides 100 feet of minor bridging, and about 50 feet of small culverts.

Korkai N.—At mile 284½ the Korkai river is crossed; the bridge would require 450 feet of waterway, with piers 50 feet above bed, and 10 feet foundations in sand over rock. Rock sites for two piers to support three 150 feet spans would probably be found at surface on survey. The nullah runs in a deep valley, so that down-and-up grades will be necessary. The actual height of the banks is 40 feet, and they are of sandy clay.

Korkai to Subanrika.—From mile 284½, the Korkai crossing, to mile 299½, the Subanrika, fewer nullahs are crossed than on the previous section, because the line is more or less on a level watershed for the greater portion of the distance. In the first three miles beyond the Korkai, there is an ascent of 150 feet on to the watershed opposite Kalimati village. This involves three miles of 1 in 100. The village of Domjori is passed at the 292nd mile. A considerable branch of the Subanrika, the Gurra, the valley of which is some 30 miles in length, runs between Domjori and the Subanrika, parallel with the line, and about a mile off to the south. The earthwork on this portion will be eight miles of 8 feet banks and cuttings in clay, three miles of 5-foot bank and cuttings in hard moorum and shales, and four miles of 5-foot bank in ordinary clay. The waterways will consist of about 60 feet of minor bridging and 50 feet of small culverts. There will be no difficulty about gradients; after once the ascent from the Korkai is accomplished the gradients will be very flat.

Subanrika.—The Subanrika river is crossed at mile 299½. It will require 600 feet of waterway, that is, three spans of 200 feet resting on piers 60 feet high, on foundations sunk 20 feet in sand and resting on rock.

Subanrika N. to Narsingarh.—From the Subanrika crossing to mile 315, Narsingarh, the line runs more or less parallel to the Subanrika, and about two or three miles away from it. A large number of considerable nullahs are consequently crossed, and as the intermediate ridges are generally high, the work on this portion will be heavy, and the gradients will ascend and descend. The existing road between Chyebassa and Midnapore meets the line near the Subanrika crossing, and gets on to a lot of high ground half way between Moholia and Ghatsilla, and then descend some 180 feet into the bed of the Bhatai nullah at Ghatsilla. This fall will be avoided by taking the line about a mile-and-a-half on the north-east of Ghatsilla; but the ground is everywhere very rough. On this section of 15½ miles the earthwork will consist of—Subanrika to Moholia 2½ miles, 5 feet banks in clay; Moholia to Ghatsilla seven miles of 12 feet banks and cuttings through hard clay and moorum; Ghatsilla to the Khoroti N. two miles of 10 feet banks and cuttings through quartz ridges, shales and laterite; Khoroti N. to Narsingarh four miles of 8 feet banks and cuttings in hard clay. The bridging on this section will consist of one 130 feet bridge over the Khoroti, one 80-foot bridge over the Pansa, one 70 feet bridge over the Bhatai, one 60 feet bridge over the Koudor, besides some 65 feet of minor bridges and 100 feet of small culverts.

Narsingarh to Chakulia.—From Narsingarh, mile 315, to Chakulia, mile 325, the ground is considerably disturbed by a local hill called Pira. The line passing on the north of Pira, ascends a local watershed dividing a set of nullahs which flow into the Subanrika from another set flowing east into the Dholang nullahs, a tributary of the Subanrika, to be crossed by the line further on. The general character of the country is high undulations, separated by deep nullahs and ravines. The earthwork of this section will consist of 10 miles of 10 feet banks and cuttings in hard clay. The bridging will be one 60 feet bridge over the Sindiri nullah, and one 40 feet over the Gandrupi nullah, with 60 feet of minor bridging and 50 feet of small culverts. The gradients will, on account of the undulatory character of the ground, be a good deal up-and-down.

Chakulia to Jambandi.—The next 10-mile section, from Chakulia, mile 325, to Jambandi mile 335, is through a country whose formation consists, like the last, of high rolling downs; this is naturally very unfavourable for gradients; but as this section lies principally on a watershed, the waterways required will be trifling. The earthwork will be about 10 miles of 8 feet banks and cuttings in hard clay. The waterways will consist of about 100 feet of culverts. Most of this section is through dense stunted sal jungle.

Jambandi to the Cossye N.—From Jambandi, mile 335, to the Cossye river, mile 351, a distance of 16 miles, the line after crossing the Dholang nullah can be located so as to run more or less on a watershed. For the first eight miles the earthwork will be 8 feet banks and cuttings in hard clay, and for the last eight miles 6 feet banks in ordinary clay. The Dholang nullah will be crossed at mile 335½ by 200 feet of bridging, 30 feet above bed, with 20 feet foundations in sand resting on clay. The remaining waterways on this section will be one 50 feet bridge over a nullah at the 348th mile, and about 250 feet of minor bridges and culverts.

Cossye N.—At the 851st mile the Cossye river is crossed by 800 feet of bridging, piers 35 feet high, foundations probably 60 feet in sand. A careful survey will be necessary to find the best crossing for the Cossye. I have put it at $4\frac{1}{2}$ miles down-stream from the Chyebassa-Midnapore road-crossing, where 800 feet of waterway will be sufficient. The road-crossing being unbridged was naturally selected for its breadth and consequent shallowness.

It is there about 1,400 feet wide; but that 800 feet of waterway is not insufficient is proved by cross-sections of two sites 50 miles apart—one opposite Midnapore, and the other 50 miles further down-stream, and both on the Bombay-Calcutta road; in the first the breadth at highest flood-level is 750 feet, and the greatest depth 20 feet, and in the latter the highest flood breadth is 800 feet, and greatest depth 30 feet. These and other cross-sections were given me by the Executive Engineer, Cossye Division.

Cossye N to Midnapore.—From the Cossye river, mile 351, to Midnapore, mile 365, a length of 14 miles, the country is easy and level. The first five miles are in the Cossye valley and very level; but a good deal of local drainage into the Cossye is crossed. The latter nine miles are on a tolerably level plateau, and almost on a watershed. As the general level of this high ground is some 60 to 80 feet above the Cossye valley, there will be an ascent at about the 356th mile. It would be possible to avoid this high ground by following generally the course of the Chyebassa-Midnapore road, and remaining down in the Cossye valley, but much more waterway would be required; and at one point, near Midnapore, where the plateau projects into the river, there would be some heavy work. If it were any object to connect the railway with the navigation canal, the preferable site for the Midnapore station would be south of the town and on the river bank; or better still, the alignment from Jambandi should go south of the Cossye river, as shown by the thin dotted line; but if, as is more probable, the railway and canal would serve for entirely different purposes, the latter continuing to carry grain to the Hooghly from Midnapore, the best site for the station would be close to the north of Midnapore on the high ground. The average work on this section of 14 miles will be five miles of 6-foot banks in ordinary clay, one mile of 10 foot banks and cuttings in hard clay and moorum, and eight miles of 4 feet bank in clay. The bridging would be 200 feet of 10 to 20 feet bridging, and 150 feet of small culverts.

General remarks.—The previous paragraphs give all necessary information for a preliminary rough estimate for the 95 miles from the junction with the Bilaspore-Sitarampore survey to Midnapore. An approximately correct aneroid section of the route can hereafter be given, but the observations have not as yet been worked out. There will, however, be no difficulty about getting over the ground with 1 in 100 as the ruling gradient. The first 70 miles of the country can be very well compared with the portion of the Bilaspore-Sitarampore line between Rangadeh and the Bamni river, except that the gradient will not be so continuously downwards.

Midnapore to Howrah.—With reference to the remaining 67 miles from Midnapore to Howrah, the only information I am able to give is what I could gather from the Collector and Executive Engineer at Midnapore. The gradients over this portion of the route will be practically level; wheels and large areas of flooded country, and spills from large rivers, and the chances of the frequent bursting of any of the very numerous embankments, will be the principal difficulties to be contended with. It will be impossible to calculate, and difficult to estimate, the amount of water to be allowed for in these spills and floods, the flood-opening question will probably be solved by the practical, but expensive, method of throwing up the bank, and waiting to see to what extent and at what places it is breached.

The net-work of bunds which crosses the country in all directions will be a good criterion for the height of the bank.

Roopnarain and Damooda.—The Executive Engineer, Cossye Division, was good enough to get me sections of the Roopnarain and Damooda rivers where crossed by the Trunk Road. The width of flood-level of both these rivers is surprisingly small, but they are only kept from flowing over the whole country by the bunds along both banks, which are kept up by the Public Works Department. The ground-level near both these rivers is only 10 or 12 feet above mean sea-level. In the case of the Roopnarain the bunds which retain the floods are eight feet above the ground surface. In the case of the Damooda the floods rise six feet over the ground surface, and are only retained by the bunds, which are 10 feet above the ground.

Roopnarain.—The width between the embankments of the Roopnarain is 1,700 feet, but judging from other sections and calculations, which see further on, I should say that the river must be crossed by 5 500 feet of bridging. The maximum height from deepest part of stream to top of embankment is 38 feet, allowing 12 feet more for country-boats, the piers of a bridge would be 50 feet high. The foundations may be anything—100 feet will probably not be considered an excessive estimate.

Damooda.—In the section of the Damooda, the width between embankments is 1,250 feet, and the maximum height from deepest part of stream to top of embankment is 20 feet. The height of piers would therefore be 40 feet. Foundations, as in the Roopnarain, probably 100 feet: 1,250 feet of waterway is required for the main channel.

Damooda and Roopnarain.—The cold-weather depth of water in the Roopnarain at deepest is 20 feet, and in the Damooda 14 feet. A very careful survey of both rivers would of course be necessary before the crossing sites could be fixed. The two sections now

available would probably be greatly improved upon, as they were not taken at selected points; but where the Trunk roads happened to cross. A site on both rivers, about three miles up-stream from the road, would appear, from the inch-to-the-mile maps, to be the best crossing. The height of tidal or cyclonic wave is an important matter so near the sea, but I presume that the engineers who designed the embankments knew all about that.

Banks between Midnapore and Howrah.—I do not think an average of 12 feet banks for the whole of this 67 miles an excessive estimate, because for many miles at a time over the inundated areas the banks will probably average 15 feet. The soil will be ordinary rice bday.

Waterways.—The estimate I can make for the minor waterways will necessarily be very vague. From mile 865 to mile 875, there will probably be 200 feet of bridging, 20 feet high, over large khalls, and 300 feet of minor culverts. Between miles 875 and 885 there will be 300 feet of bridging, 30 feet high, over the Pilsapai N, and 400 feet of minor openings. From mile 885 to 395, I estimate one 100 feet bridge, 20 feet high, over the Toper khall, and 400 feet of minor openings; from mile 395 to mile 402, say, 200 feet of culverts; between the 402nd and the 406th miles are the Roopnarain and Damooda rivers; from the Damooda into Howrah, mile 432, the bridging would probably be as calculated in the following pages of notes upon the Roopnarain and Damooda spill-waters. An elaborate survey for these waterways would of course, be required, but a good idea of them can even now be formed.

Notes on the waterways required for the Roopnarain and the Damooda and their overflows.

Notes on the Roopnarain and Damooda.—The fall of the ground in the alluvial valley, containing these two great rivers, appears to be only some three or four inches per mile. It is therefore only what might have been expected, that, running as they do parallel to each other, and only five to ten miles apart, their flood-waters should get mixed, and that they should overflow through beels and khalls and over the surface of the country into each other and into the Hooghly.

Without an extensive survey it will be impossible to exactly fix the quantity or the location of the bridging required.

We possess, however, sufficient information to enable an engineer to assert that nothing less than a certain number of lineal feet will suffice. We are bound to provide for the passing off, at no extraordinary velocity or depth, of the drainage of 12,350 square miles of country between mile 395, the Cossye-Roopnarain watershed, and Howrah terminus, mile 432. First, to take the case of the Roopnarain, which presents no great difficulties, it drains an area of 3,300 square miles, which, using Colonel Dickens' formula, with so small a coefficient as 705, represents a discharge of 305,000 cubic feet per second. I have a section, kindly procured for me by the Executive Engineer, Cossye Division, at a point about eight miles up-stream from the Trunk road crossing, on which, for a 17 feet flood, there is a flood area of 41,873 square feet. This, with above discharge, would give a velocity of 7.28 feet per second. With so small a fall as three or four inches per mile, we can certainly allow of no greater velocity than this through the bridge. The breadth of the river at this site is 5,500 feet, and the mean depth 7.6 feet.

Of above flood area of 41,873 square feet, a large proportion—16,543 square feet—represents water only four feet deep, flowing over the surface of the ground between the edge of the main stream and the embankment. It would be impossible to throw this 16,543 square feet into the main stream without increasing the velocity to an extent quite inconsistent with the fall of the ground. Deducting this 1,136 feet of shallows, if we were to endeavour to throw the whole of the water through the remaining 1,364 lineal feet of main stream, we should get no very much greater depth, but a much greater velocity—some 11 to 12 feet per second—which could not be allowed over the alluvial silt. It therefore seems impossible to avoid a length of some 5,500 feet of bridging, and whether the whole of this, or only half of it, is built on deep well foundations, will depend entirely upon what future borings tell us as to whether the actual river has been always within its present deep channel, or whether it has wandered about anywhere within the 5,500 feet over which its flood now runs.

Meanwhile it is safest to estimate for 5,500 feet of bridging, with 100 feet well founds, and piers 50 feet high for the Roopnarain river.

We have another section of the Roopnarain at Koella Ghat, where the Trunk Road crosses eight miles below the section already considered; but this is not a representative section, because a large proportion of the flood-water has made its way over the country before this place is reached.

We have now to consider the case of the Damooda. At a point some 140 miles up-stream, just below its junction with its most important feeder—the Barrakhur river—its discharge has been thoroughly gone into for the Bilaspore-Sitarampore survey. The area of country drained above this point is 7,030 square miles. The discharge due to this area, using the low coefficient (705) with Colonel Dickens' formula, comes out 541,120 cubic feet per second. That this is correct is proved by its corresponding very nearly with the discharge calculated from the fall of bed at that point, and the known flood of 31 feet between defined banks. The bridge, as designed at this point for the Bilaspore-Sitarampore survey; gives a waterway for a 31 feet flood of 55,800 square feet. At the site where the Midnapore alternative would cross the area of country drained by the Damooda is 9,050 square miles.

The discharge calculated by the same formula is 654,240 cubic feet per second. In a section of the Damooda, at the Trunk road crossing, the breadth between the embankments is only 1,250 feet, and the area of flood section 12,115 square feet. In another section, at a point eight miles farther up-stream, the breadth between embankments is only 1,180 feet, and the flood area 8,954 feet. If we assume a velocity, the same as was found at the Roopnarain, of 7.28 feet, we get a discharge through the main stream of the Damooda of only 88,000 feet, or only about one-eighth of what we know the discharge must be at this point, and only one-sixth of what it is accurately known to be where crossed by the Bilaspore-Sitarampore survey. The remainder of the discharge, or 566,000 cubic feet, must find its way through the line somewhere between mile 406 and Howrah. A great portion must find its way through khall and nullahs, which can be seen on the map; but the greatest portion must flow over large areas of country in the form of broad inundations. As the fall of the country is extremely small, we cannot assume a greater velocity for this flood than 5 feet per second; and if we assume that the water runs 12 feet deep in the khalls and 6 feet deep over the country, we find that a length of bridging of some 470 feet is required over the khalls, 9,400 feet of minor bridging, culverts, and flood-openings, and, in addition to this, 1,250 feet of major bridging, with 40 feet piers over 100 feet wells, would be required for the main channel.

Trade.—I am not in a position to express an opinion of any value upon the question of local trade. I can only say that from mile 270 to mile 327 the country may be described as a narrow valley covered with jungle, and having small patches of cultivation around the villages. The portion between mile 270 and 285 may be described as a sort of "divide," or "watershed," between the trade which centres on Purulia and that which centres on Midnapore. This section is then, as might be expected, destitute of roads. The Chyebassa-Midnapore road comes in at mile 285; but as far as the commencement of the Midnapore district, mile 327, it appears to serve no local necessity for traffic, as the villages are small, and scattered through dense jungle. I met nowhere, so far, those dense herds of laden pack-bullocks or sugar-carts to be met with over the Chota Nagpore roads.

After the Midnapore district is entered the country becomes more cultivated, and there is doubtless more grain grown than is consumed locally; still, as far as mile 350, four-fifths of the country is covered with jungle. In his report on his suggested Gewankhali route, Mr. R. H. Wilson, Collector of Midnapore, mentions the traffic to be expected from the rich Bamunhati valley in Moubhunj. It seems to me that this traffic will continue to find its way, as at present, from its centre, Baripada, *via* Sirsa along the Bombay road into Midnapore direct. Bengal producers consign to small local mahajuns, who in their turn consign to their correspondents in the great trade centres of the districts; and when once the mahajun's caravans have been loaded up, it matters little to them whether they have to travel five marches or ten. A precisely similar case is that of Ranigunge, which has long been a great trade centre and the residence of large mahajuns; a great trade from Chota Nagpore, which it might have been expected the railway at Barrakpur, or at all events Sitarampore, would have tapped, is actually carted along the Trunk road past Barrakpur and Sitarampore, and parallel to the East Indian Railway to Ranigunge. This is not entirely due to custom, but, as the people have frequently told me, to a dislike to the delay and worry of breaking bulk, and waiting probably, quite as many days at the railway station as they would have spent on the extra road-marches. I can say nothing about the traffic between Midnapore and Calcutta, but it must be thoroughly well known by the Midnapore civil authorities.

This district, as well as that of Hooghly, must be very rich, and both appear to be densely populated east of the town of Midnapore.

Stations.—The first place where the probability of traffic would suggest a station is Moholia, at mile 302, where the Chyebassa road comes in; but as this is 30 miles from Sini station, at the 270th mile of the Bilaspore-Sitarampore survey, it will be necessary to have an intermediate station at Susindi, mile 287. It is scarcely probable that minor intermediate stations would pay in this jungle valley. Ghatsilla, at mile 308, is an important town with a thana and post office, and a resident Rajah; but as owing to the low level of the town the line must be taken a mile and-a-half to the north-east, Ghatsilla will be sufficiently served by Moholia station, and the next, at mile 315, at Narsingarh. Although Chakulia, mile 325, is only 10 miles further on, it is the junction of several roads, and a station there would perhaps draw traffic. The next possible site would be Jambundi, mile 337. Then in the Cossye valley, a station at mile 353, opposite Chandra the road stage would be necessary. The country around here is very rich, and much indigo is grown. Midnapore, at mile 365, would require a second class station. From Midnapore into Howrah frequent small stations ought to pay. The following sites would suggest themselves for third class stations:—Kamalpur, mile 381; Jadupur, mile 395; Khanpur, mile 409; Sankrail ferry, mile 423. Probably another station at Mandara, mile 404, between the Roopnarain and the Damooda, would be desirable.

Level-crossing.—From mile 270 to mile 350 the inter-village traffic is so paltry that the bridges would very frequently be sufficient for the herds of cattle. A third class level-crossing in addition every four miles would probably be sufficient. From mile 350 to mile 380, a third class crossing every two miles would be probably enough. From mile 380 to Howrah, mile 432, the high banks with frequent openings would give such facilities to traffic that one third class crossing every mile-and-a-half would suffice, notwithstanding the greater density of the population. In addition to the above 70 third class crossings, it will be

necessary to give second class crossings at the following places for the main district roads:— Mile 275, Chyebassa-Purulia road; mile 325, Chyebassa-Midnapore road; mile 355, Chyebassa-Midnapore road; mile 364½, at Midnapore station, for the Bankoora road; and mile 369 for the Buidwan and Midnapore road; that is, five second class crossings.

Ballast.—There is abundant material for cheap ballast from mile 270 to mile 370. From mile 370 to mile 432 ballast will have to be burnt, and as fuel is scarce it will be expensive.

Building materials.—Brick will probably be the best building material all along the line; there is no good building stone anywhere. Lime and fuel are plentiful for 100 miles out of the 162.

Sleepers.—Sal timber, suitable for sleepers is plentiful for the first 50 miles; it will be scarcer along the next 50; and whatever has been found the cheapest sleepers on the other railways around Calcutta will probably be used on the remaining 62 miles.

Land.—The price will vary according to the distance from Calcutta: temporary land has been put down in the estimate at half the price of permanent land.

Estimate.—Appended is an estimate founded upon this report; according to this the cost of the 162 miles comes out as Rs. 2,32,38,000, or Rs. 1,43,444 per mile.

The rates generally are the same as on the Bilaspore-Nitarampore survey.

Earthwork Estimate.

From mile	To mile	Average cutting or bank.	Quality of soil.	Rate.	Amount.
				Rs. A. P.	Rs.
270	284½	10	Clay	5 0 0	1,50,484
284½	292½	8	Do.	5 0 0	60,780
292½	295½	5	Hard moorum and shales	7 0 0	16,642
295½	299½	5	Clay	4 0 0	12,072
299½	302	5	Do.	4 0 0	8,712
302	304	12	Hard clay	7 0 0	1,86,656
304	311	10	Quartz, shales, and laterite	15 0 0	64,380
311	316	8	Hard clay	6 0 0	30,760
316	325	10	Ditto	6 8 0	1,37,280
325	335	8	Ditto	0 0 0	91,682
335	343	8	Ditto	0 0 0	73,500
343	351	6	Clay	4 0 0	32,104
351	355	6	Do.	4 0 0	10,652
355	365	10	Hard clay and moorum	7 0 0	14,784
365	366	6	Clay	4 0 0	30,120
366	432	12	Do.	6 0 0	11,20,393
Total for Earthwork					20,08,000

Estimate for Permanent Land

From mile	To mile	Height of bank.	Width of land, feet.	Length in miles.	Acres.	Rate.	Amount.
						Rs. A. P.	Rs.
270	350	6	90	19	110	60 0 0	6,590
.....	.....	8	94	7	80	.....	4,000
.....	.....	8	102	30	370	.....	18,500
.....	.....	10	110	28	350	.....	17,500
.....	.....	12	118	7	100	.....	5,000
350	375	6	94	14	160	100 0 0	16,000
.....	.....	10	110	1	10	.....	1,000
.....	.....	12	118	10	140	.....	14,000
375	432	12	118	57	820	150 0 0	1,23,000
Total for Permanent Land							2,04,590

Estimate for Temporary Land.

From mile	To mile	Height of bank.	Width of land, feet.	Length in miles.	Acres.	Rate.	Amount.
						Rs. A. P.	Rs.
270	350	6	78	19	100	25 0 0	2,500
.....	.....	8	90	7	80	.....	2,000
.....	.....	8	102	30	310	.....	12,750
.....	.....	10	110	28	270	.....	1,750
.....	.....	12	118	7	170	.....	4,250
350	375	6	94	14	170	50 0 0	8,500
.....	.....	10	110	1	30	.....	600
.....	.....	12	118	10	230	.....	11,500
375	432	12	118	57	1,340	75 0 0	1,00,000
Total for Temporary Land							1,54,250

Estimate for Level-crossing.

Number	Class	Rate.	Amount.
		Rs. A. P.	Rs.
6	Second class	400 0 0	2,400
70	Third "	200 0 0	14,000
100	Rate "	100 0 0	10,000
Total for Level-crossings			26,400

Estimate for Ballasting.

From mile	To mile	Material	Rate	Amount.
270	270	Broken stone and gravel very abundant and not far off	Rs. 3 per 100 ft.	Rs. 3,48,500
370	432	Brick ballast must be burnt	" 8 ditto	5,76,000
		Add 10 per cent. for stations		92,500
Total for Ballasting				10,16,000

Estimate for Major Bridges

Mile.	Name of River.	Waterways in feet.	DESCRIPTION OF BRIDGE.	Rate per foot.	Am out.
				Rs.	Rs.
270½	Khori N	30	Arch	300	9,000
280	Murkum N	40	Girder	350	14,000
284½	Korkai river	450	Girders on piers 50 feet high, founds 10 feet in sand resting on rock.	400	1,80,000
299½	Subanrika river	600	Girders on piers 60 feet high, founds 20 feet in sand over rock.	450	2,70,000
303	Kondor N	60	Girders on piers 20 feet high, founds 10 feet on clay	350	21,000
309	Bhatai N	70	Ditto 30 feet high on rock	300	21,000
311	Khutsoti N	100	Ditto 20 feet high, six feet founds in clay	300	30,000
313½	Pansa N	80	Ditto ditto ditto	300	24,000
319½	Sindiri N	60	Ditto ditto ditto	300	18,000
324½	Gandrupi N	40	Fifteen feet piers, clay founds	300	12,000
335½	Dholang N	200	Girders on piers, 30 feet high, founds 20 feet in sand over clay.	350	70,000
348	Pansa N	50	Piers 20 feet high, 10 feet founds	300	15,000
351	Cossye river	800	Girders on piers 35 feet high, resting on wells 60 feet deep in sand.	450	3,62,000
380	Pilaspai khali	300	Girders on piers 30 feet high, 10 feet founds in clay	350	1,05,000
402	Roopnarain	5,500	Ditto 50 feet high, resting on wells 100 feet deep in silt.	600	33,00,000
408	Damooda	1,250	Girders on piers 40 feet high, resting on wells 100 feet deep in silt.	600	7,50,000
Total for Major Bridges					51,91,000

Estimate for Minor Bridges and Culverts and low Waterways.

From mile	To mile	Lineal feet of waterways.	DESCRIPTION.	Rate per foot.	Amount.
				Rs.	Rs.
270	284½	100	Bridging from 10 to 30 feet spans	330	33,000
		50	Culverts under 10 feet spans	230	11,500
284½	299½	50	Bridging from 10 to 30 feet spans	330	16,500
		50	Culverts under 10 feet	230	11,500
299½	315	60	Bridging from 10 to 30 feet spans	330	19,800
		100	Culverts under 10 feet	230	23,000
315	325	60	Bridging from 10 to 30 feet spans	330	19,800
		50	Culverts under 10 feet	230	11,500
325	335	100	Ditto ditto	230	23,000
335	351	200	Bridging from 10 to 30 feet spans	330	66,000
		50	Culverts under 10 feet	230	11,500
351	365	200	Bridging from 10 to 30 feet spans	330	66,000
		150	Culverts under 10 feet	230	34,500
365	375	200	Bridging from 30 to 60 feet	350	70,000
		200	Ditto from 10 to 30 feet	330	66,000
		100	Culverts under 10 feet	230	23,000
375	385	100	Bridging from 30 to 60 feet	350	35,000
		200	Ditto from 10 to 30 feet	330	66,000
		100	Culverts under 10 feet	230	23,000
385	395	200	Bridging from 30 to 60 feet	350	70,000
		200	Ditto from 10 to 30 feet	330	66,000
		100	Culverts under 10 feet	230	23,000
395	402	200	Ditto ditto	230	46,000
402	422	4,700	Bridges 80 to 100 feet over khalls	350	16,45,000
		4,700	Flood openings	300	14,10,000
		4,700	Smaller openings and culverts	250	11,75,000
Total for Minor Bridges					50,88,000

NOTE.—The rate, Rs. 330, is the mean of 40 similar bridges in the Bilaspore-Sitarampur surveys, and Rs. 230 is the mean of 100 culverts on the same survey.

Station Estimate.

Mile.	NAME OF STATION.	Class.	Rate.	Amount.
				Rs.
287	Sasudi	3	Rs. 3,000 per mile for 162 miles.	
309	Moholia	3		
315	Narsingarh	3		
325	Chakulia	3		
337	Jambandi	3		
353	Chandra	3		
365	Midnapore	3		
381	Kamalpur	3		
395	Jadupur	3		
409	Khanpur	3		
423	Sankrail ferry	3		
432	Howrah terminus	...		
432	Offices and station machinery	...		
Total for Stations				4,86,000

Estimate for Sleepers.

From mile	To mile	Number of sleepers.	DESCRIPTION.	Rate.	Amount.
				Rs. A.	Rs.
270	320	100,000	S&L timber	1 12	1,75,000
320	370	100,000	Ditto	3 0	3,00,000
370	432	124,000	Same as used on Central Bengal Railway	6 0	7,44,000
Total for Sleepers					12,19,000

PERMANENT-WAY ESTIMATE.

Rails, fastenings, and plate-laying.

162 Miles, at Rs. 16,600 per mile ... 23,89,200

Fencing.

162 Miles at Rs. 1,000 per mile will allow for wire fencing for the Calcutta end and mud-walling through the jungle ... 1,62,000

Workshops.

162 Miles, at Rs. 500 per mile ... 81,000

Rolling-stock.

162 Miles at Rs. 10,000 per mile ... 16,20,000

Plant.

Four lakhs is little enough to allow for the whole line considering the big bridges ... 4,00,000

Electric Telegraph.

162 Miles at Rs. 800 per mile ... 1,29,600

Abstract of Estimate.

No.	Main head.	No.	Sub-head.	How calculated.	Amount.
					Rs.
I	Preliminary expenses	1	Survey expenses	At Rs. 1,000 per mile for 162 miles	1,62,000
		2	Plant	See estimate	3,58,750
		3	Establishment	Ditto	20,09,000
II	Land	...	...	...	...
III	Construction of line	1	Earthwork	Ditto	50,68,200
		2	Minor bridges and flood-openings	Ditto	51,91,000
		3	Large bridges	Nil	
		4	Tunnels	See estimate	28,000
		5	Level crossings	At Rs. 1,000 per mile	1,62,000
		6	Fencing	At Rs. 800	1,29,600
		6	Electric telegraph	See estimate	10,16,000
IV	Ballast and permanent-way.	1	Heaving	Ditto	12,19,000
		2	Sleepers	At Rs. 16,600 per mile	23,89,200
V	Stations and buildings	1	Rails, &c., and plate-laying	At Rs. 3,000	4,86,000
		2	Stations and offices	At Rs. 500	81,000
		3	Workshops, store buildings, &c.	At Rs. 400	64,800
		4	Staff quarters	Included in stations and offices	
VI	Plant	...	Station machinery	For whole line	4,00,000
VII	Rolling-stock	...	Includes all sub-heads	For whole line at Rs. 10,000 per mile	16,20,000
VIII	Establishment	...	Includes everything	10 per cent. on all items except VI and VII	18,36,325
IX	Contingencies	...	...	5 per cent. on all except establishment	10,19,525
Total of this estimate					2,32,38,000
Or per mile					1,43,444

F. J. E. SPRING,
Executive Engineer.

No. 409R, dated Purulia, the 7th May 1883.

From—H. H. RISLEY, Esq., Offg. Deputy Commissioner of Manbhoom,
To—The Secy. to the Govt. of Bengal, Public Works Dept. (Railway Branch.)

With reference to Government order No. 4472A, dated 16th December 1882, deputing me on special duty to enquire into the trade of Chota Nagpore as affecting the prospects of the proposed railway from Sitarampore to the Central Provinces, I have the honour to submit a report on the subject with two maps—one illustrating the general course of trade in Chota Nagpore, and the other showing the places where limestone has been discovered in the neighbourhood of the Barrakur Iron Works.

2. The submission of the report has been delayed, partly by difficulties in obtaining detailed statistics of the trade of the East Indian Railway, partly by the labour of compiling the statistics of local registration from badly-written vernacular reports, and partly by press of work thrown upon me after taking charge of this district.

3. If the report is deemed worthless for statistical purposes, I would ask that it may be remembered that in a demi-official letter to Mr. Levinge, written in December, I pointed out the extreme difficulty of obtaining any statistics whatever, and generally deprecated my deputation on duty, the results of which were not likely to bear any reasonable proportion to the time spent on fruitless enquiries. I believe the report exhausts all existing sources of information, but it is doubtful whether any one who knows the Chota Nagpore Division well will accept those parts of it which deal with quantities as fairly representing the real trade. At the same time, without going into mere guess-work, it is difficult to see how the quantities can be raised; and there always remains the argument that, if the avowed object of the railway is to create a trade, it is illogical to ask for statistics of that which *ex hypothesi* does not yet exist.

Report on the trade of Chota Nagpore in its bearing on the proposed Railway from Sitarampore to the Central Provinces.

1. *Plan of this Report.*—An attempt will be made in this report to describe the general character of the country included in the Chota Nagpore Division; its mineral and agricultural products; the marts at which the trade of the area is collected, and the routes by which it is conveyed. Having thus indicated roughly the resources of the country as a whole, I shall proceed to discuss in detail the chief articles with which its trade is concerned, and shall endeavour to frame from such data as are available an approximate estimate of the probable trade on the proposed railway from Sitarampore on the East Indian line to Nagpore in the Central Provinces, during the first few years of its existence. With the through traffic which may be looked for between the Central Provinces and Calcutta, I shall not attempt to deal, nor shall I concern myself with *local* trade, properly so called, between places situated within Chota Nagpore.

2. *Character of the country.*—The Chota Nagpore Division is a pear-shaped tract of hilly and undulating country, forming three successive steps from the high lands of Central India to the alluvial plains of Bengal. On the extreme west of the division the Tributary States, a confused mass of hills, ravines, and plateau, project like a wedge into Rewa and Central Provinces, sending up streams on the north towards the Sone and the river system of Behar, and on the south towards Orissa and the Bay of Bengal. It is believed that, at a remote geological period, the entire country now included in the Tributary States formed a uniform table-land, elevated about 3,600 feet above the sea. Traces of such a state of things are to be found in the flat-topped hills, locally known as *pals*, several of which mark the descent from the State of Sirgoolah into the British district of Lohardugga. The combined action of rivers, wind, and rain has long since broken up the original plateau into a hill system so complicated as to render it impossible to define the physical features of the Tributary States with minute precision.

3. *Lohardugga District.*—The district of Lohardugga, forming the central and north-western portion of the division, comprises three tracts of country which differ essentially in aspect and physical conformation—Chota Nagpore proper, the five pergunnahs bordering on Manbhoom, and the sub-division of Palamow. Chota Nagpore proper, as distinguished from the Commissioner's Division bearing that name, is an elevated table-land situated about 2,100 feet above the sea, and occupying the central and southern portion of Lohardugga district. The five pergunnahs on the east resemble in most respects the adjoining district of Manbhoom. Their average elevation is about 1,000 feet less than the central plateau. On the north-west the table-land falls away into the sub-division of Palamow, which extends on the north to Behar and the Mirzapore district of the North-West Provinces. On the east and south, Palamow consists of spurs thrown off from the plateau of Hazaribagh and Chota Nagpore proper; while the rest of the sub-division is a tangled mass of isolated peaks and long irregular stretches of broken hills. The average elevation of the country is about 1,200 feet above sea level, but the surface is wilder and more cut up by rock and jungle than in Chota Nagpore proper, and there are no level areas of any extent except the valleys of the North Koel and Amand, to which rice cultivation is confined.

4. *Hazaribagh District.*—On the north and north-east of Lohardugga the central plateau of Hazaribagh rises to an average height of 2,000 feet above the sea. This plateau, which is connected by a narrow neck of land with the corresponding level in

Lohardugga, occupies only a limited area, while the rest of the district lies at an average elevation of 1,200 or 1,800 feet above sea level. The northern portion of Hazaribagh is divided by a well marked range of hills from the plains of Gya district, which are about 800 feet below the lower level of Hazaribagh.

5. *Manbhoom District.*—Due east of Lohardugga, and south-east of Hazaribagh, the district of Manbhoom forms the last step in the gradual descent from the high land of Central India to the delta of Bengal. Here the undulations of the surface become less pronounced, and follow each other at longer intervals than in Lohardugga and Hazaribagh; while level tracts of considerable extent are of more frequent occurrence. In the central and eastern portions of the district the country is open and consists of rolling-downs, dotted here and there with isolated conical hills. The average elevation may be taken at 800 feet above sea level.

6. *Singbhoon District.*—The south-eastern corner of the division is occupied by the district of Singbhoon, an elevated basin shut in on the north, west, and south by the spurs of the Chota Nagpore plateau and the hills of the Orissa Tributary States, and imperfectly open on the east towards the district of Midnapore. Chyebassa, in the centre of the district, is about 700 feet above the sea; but the surrounding ranges of hills are considerably higher.

7. *Geological character.*—The prevailing geological formations of the Chota Nagpore Division belong to the metamorphic or granite and gneiss series, and to the sub-metamorphic or slate and quartzite series. Coal-bearing shales and sandstones occur over the whole area, except in the district of Singbhoon, frequently in conjunction with iron, stone, shales, and hæmatite. The known coal-fields of the division, and some of their more important characteristics, are shewn in the following table:—

Number.	Name of Coal-field.	Where situated.	Area in square miles of coal-bearing strata.		Estimated yield in tons.	Percentage of carbon, ash and volatile matter.	Maximum thickness of seams.	REMARKS.
			Sq. m.	Feet.			Feet.	
1	Lakharpur	Sirgoojah State	400	4,600	.....	.....	.....
2	Bisrampur	Sirgoojah	35	.....	.....	.....	.....
3	Jhimilli	Sirgoojah	35	.....	.....	.....	.....
4	Hingir or Rairgurh.	Gangpur Tributary State.	400	.....	.....	Carbon 39.9 Ash 20.6 Volatiles 33.0	64	Dip of coal-bearing strata very small.
5	Auranga	Lohardugga district.	97	1,500	20,000,000	Carbon 30.5 (a) Ash 27.5 Volatiles 29.3	.....	(a) Specimen taken from old surface coal, better results expected from lower seams.
6	Hutar	Lohardugga	79	2,780	.....	Carbon 55.85 Ash 10.7 Volatiles 24	.....
7	Daltongunge	Ditto	200	.....	11,400,000	Carbon 64.4 Ash 13.4 Volatiles 22.4	.....
8	North Karunpura.	Hazaribagh	472	2,000	8,760,000,00	Carbon 61.0 (b) Ash 8.5	77 feet average.	(b) Specimens analysed were taken from the best coal of both fields.
9	South Karunpura.	Ditto	72	.....	75,000,000	Volatiles 27	30 to 40 feet.	
10	Ramgarh	Ditto	40	4,000	.....	.....	.....
11	Bokaro	Ditto	220	.....	1,500,000,000	.....	.....
12	Itkauri	Ditto	221	.....	2,000,000	Ash 35 per cent.	.....
13	Chupe	Ditto	3	.....	.....	(c)	.....	(c) Not regularly tested, but reported worthless, except for lime-burning.
14	Karharbari (d)	Ditto	11	.....	1,300,000,000	Carbon 67.51 Ash 11.07 Volatiles 20.82	.....	(d) Worked by East Indian Railway.
15	Jheria	Manbhoom	200	4,800	464,000,000	Carbon 58 to 62 Volatiles 37 to 40 Ash 11	60 feet	Average thickness 24 feet. Dip of strata slight.

8. *Coal. The Jheria field.*—Of the coal-fields enumerated above only two have any direct bearing upon the prospects of the railway from Sitarampore—the Jheria coal-field (No. 15 on the list), and the Hingir coal-field (No. 4 on the list). The greater portion of the Jheria field lies north of the river Damooda in the sub-division of Govindpore. Its length from east to west is about 18 miles, its greatest breadth from north to south being 10 miles. Its south-eastern corner, marked by the village of Tasra on the north bank of the Damooda is about 12 miles from Jhapra, a village between Purulia and Raghunathpore, through which the line will pass. There would be little difficulty in constructing a coal line up to the Damooda through the country traversed by the existing road from Jhapra to Govindpore. The surface undulations are trifling, and hardly any bridging would be required, as the line would run parallel to the small streams draining into the Damooda. During the dry season coal could be transported across the river on a temporary bridge, operations being wholly suspended in the rains. Of that part of the field which is situated to the north of the Damooda, the eastern portion belongs to the zemindar of Jheria and the western to the zemindar of Nowagur, a minor under the charge of the Court of Wards. A narrow strip of coal-bearing strata on the south of the Damooda, lying about 12 miles from the nearest point on the line, belongs to the Rajah of Pachote. If the coal of this southern strip is as good, and the strata dip at as small angles as in the northern area, the southern part of the field should apparently be opened up first, as the Damooda will in any case interfere with the transport of coal from the northern section of the field. The

entire question will doubtless be carefully worked out when the construction of the railway is sanctioned. It may be gathered from the geological reports that the Jheria coal-field presents special facilities for cheap working, in that the coal lies very near the surface and the strata dip at unusually small angle to the horizon.

9 *The Hingir field.*—The line will pass through the southern portion of the Hingir field situated partly in the Chota Nagpore Tributary State of Gangpur, and partly in the state of Raigurh in the Central Provinces. In discussing the probable economic value of this field, Mr. V. Ball, F. R. S., remarks:—"The seams which are exposed in

the portion of the field at present under description are neither very numerous nor individually of promising quality; but it must be remembered that the coal measure rocks are not only as a whole very slightly disturbed from their original horizontal position, but are much covered by superficial deposits, and that there is a complete want of sections which might shew the succession of beds constituting the group. The true or even approximate value of the field therefore can only be ascertained by borings. In the meantime it may safely be asserted that there is a fair prospect of this field proving to be of considerable value."

10. *Iron and Limestone.*—An elaborate report on the iron works at Burrakur, which are about to be experimentally worked by Government, has been published in the *Gazette of India*, and I need not attempt to discuss the prospects of the scheme. A copy of a map prepared by Ritter von Schwarz, the Engineer in charge of the works, shewing the places where iron-ore, limestone, and coal occur in the immediate neighbourhood of the iron works, is annexed to this report. The probable demand on the railway for carriage of manufactured iron, limestone, and lime is roughly estimated in paragraph 75 below.

11. *Copper in Singhbhum.*—In 1854 the copper veins and mines of Singhbhum, worked in pre-historic times by a people whom local tradition alleges to have been Jains, were described by Captain J. C. Haughton in the *Asiatic Society's Journal*. His paper attracted the notice of two Calcutta merchants, who engaged Mr. Emil Stöhr, a skilled mining geologist, to make investigations. In 1857 a company was started, and fine raw ore was turned out, at the rate of from 1,200 to 1,300 cwt., a month, and delivered in Calcutta by way of Purulia and Raneebunge. From the first the enterprise was conducted on too expensive a scale. A high mining rent was paid, and a foundry with a steam-engine was erected at great cost before their was ore enough to supply it. In 1859 the company was dissolved, and the buildings and machinery sold at a nominal price. In 1862 a second company was formed, only to be dissolved in 1864, without having paid even their mining rent for the two years during which they worked.

12. The copper ores are described by Mr. V. Ball, F. R. S., as occurring in a zone of schists forming the northern flank of a broken spur of hills thrown off from the plateau of Chota Nagpore. Measured along the strike, these copper-bearing rocks extend in an easterly and south-easterly direction for nearly eighty miles. The metal occurs both in lodes and as a desposit disseminated through the materials which compose the schists. There is no reason to believe that the supply of ore has been exhausted either by the ancient miners or by recent workings. The failure of the two European companies is fully accounted for by the unhealthiness of the climate, the bad means of communication, and the scanty supply of fuel and lime. Within the last 20 years the wholesale clearing of jungle has materially improved the climate; while the railway passing through the copper-bearing rocks may be relied on either to supply the means of reducing the ore on the spot, or to convey it to any place selected for the establishment of a foundry.

13. *Copper in Manbhum.*—Copper is believed to occur also near Dhadka in Manbhum, about 35 miles to the east of the proposed line; but no scientific account of the deposits has been published, and I have no means of determining their probable value. Lead containing a large proportion of silver is said to have been found in the same neighbourhood.

14. *Minerals in Hazaribagh.*—In Hazaribagh lead of good quality has been found in scattered nodules, but the sources of the metal have not been traced. Tin, copper, and antimony have been worked at various times, both by Europeans and Natives, with very moderate success. A company has recently been started to work copper mines at Baragunda near Giridi in Hazaribagh, and their shares are now quoted at a premium. Mica occurs in many places in the north of Hazaribagh district, where some mines, long managed on a wasteful system by natives, have recently been opened out by European practical miners. As none of the minerals found in Hazaribagh are likely to be carried by the Sitarampore-Nagpore Railway, I need not discuss at length the conditions under which they might be profitably worked. I will merely remark that, in the event of the Patna-Gya State Railway being extended through Palamow along the Damooda valley to Purulia, the iron ores and coal of pergunnah Karanpura, south-west of Hazaribagh, may come to be of considerable value. It is doubtful indeed whether limestone can be found in sufficient quantities to support large iron works, but this point does not seem to have been very fully enquired into.

15. *Potstones.*—The trade in potstone plates is said to have increased greatly of late years. Its chief centre is Patcoom in the south-west corner of the district. The opening of the railway will probably stimulate the demand for these heavy articles. The supply of the stone is said to be unlimited. The following remarks on the subject are extracted from a paper on Manbhum district by Mr. V. Ball:—"Chloritic schists, passing on the one hand

into talcose, and on the other into serpentinous rocks, occur not uncommonly in the sub-metamorphic, and somewhat less frequently in the metamorphic series. In building, the varieties of this material have only been used on a small scale for ornamental purposes, for which some of them, as being tough and at the same time easily carved, are particularly suited. They are more extensively employed in the manufacture of altars, in idols, plates and bowls. In the southern part of Manbhoom, on the frontiers of Singhbhum, there are numerous workings which generally take the form of narrow mines, but are deserted during the rains. From these mines a considerable quantity of stone is annually extracted; the blocks are roughly dressed to the shape required, be it for *lingam* plate or bowl. They are then fixed in a rude lathe, cut into form, and finished with a smooth surface. When finished they are carted off to Burdwan, where they are in great demand, and a portion are sent on to Calcutta for sale. One class of the varieties used stands fire well, while the other does not. The former is of course the most esteemed by the natives. The cracking of the latter is probably due to the water in combination in the more chloritic varieties which becomes released on the application of heat. In many of the ancient temples in Chota Nagpore, images made from this material are met with.

16. *Forests.*—The gradual spread of cultivation, the incessant demand for railway sleepers, and the practice of girdling the tree for resin, have combined to denude the districts of Hazaribagh, Lohardugga, and Manbhoom of most of their valuable sal forests. Extensive jungles still remain uncleared in these districts, but nearly all the trees big enough to make sleepers have been thinned out, and little besides saplings is left. Forest reserves have been formed by Government in the north-west of Hazaribagh, in the south of Palamow, and in the western corner of Singhbhum, and throughout the division the landholders are now beginning to establish small reserves locally known as *rakhwals*. These, however, are not worked on any regular system; their boundaries are usually ill-defined, and the conflicting claims of the landlord and the villagers are a fruitful source of litigation in the criminal courts. A scheme for preserving the private forests of Chota Nagpore has recently been under consideration by Government. Forest officers were deputed to examine the forests, but it is believed that, except in Singhbhum, which has only been resorted to for sleepers within the last two or three years, and in the south of Lohardugga the private forests of the division contain little timber worth preserving. In the Tributary States the original forests are still virtually untouched. Cart-roads do not exist, and the rivers cannot be used for floating timber. Here the proposed railway will open out an enormous area of virgin forest which, if properly worked, ought to meet almost any demand for an indefinite period.

17. *Agriculture. Rice cultivation.*—The system of agriculture followed in Chota Nagpore is determined, particularly in the case of rice, by the physical conformation of the country. This consists mostly of long undulating ridges between which the drainage runs off to join the large streams. The lower slopes of these ridges, and the swampy ground between, supply the only land on which a wet rice crop can be raised. The soil is, in the first instance, brought under cultivation by cutting level terraces out of the hill side, a small bank to hold up water being left round the edge of each plot. The hill sides, thus treated, present the appearance of a series of steps, varying from one to five feet in height; and when the slopes are too steep for terracing, or the soil too stony for cultivation, the bed of the stream is banked up and made into one long, narrow rice-field.

18. *Oilseeds and other upland crops.*—Wheat, barley, various kinds of millet, Indian-corn, *marua*, pulses, oilseeds, sugarcane, betel-nut, cotton, tobacco are cultivated on the higher levels of the surface where the rice terraces leave off. In Hazaribagh and Chota Nagpore proper, tea is grown by European planters on lands of this class. In 1880-81 thirty-six tea plantations had been opened in the two districts. The gross yield for that year is reported as 287,666 pounds.

19. *Agricultural statistics.*—Attempts were made at the time of the revenue survey, about 20 years ago, to record the area actually under cultivation, and to distinguish between cultivable and uncultivable waste. Conjectural estimates of the area under particular crops have been framed at various times by the district officers. None of these statistics can claim to be even approximately accurate. Within the last 20 years the cultivated area has been continually extended, and it frequently happened that the survey of a particular village was made at a time when there were no crops on the ground. Again, owing to the nature of the country, it is in many cases difficult to say whether a given plot of land is cultivable or not; and steep slopes which have the most sterile appearance are frequently terraced into rice lands. Although no estimate of the area of cultivable waste would possess the smallest statistical value, there can be little doubt that the opening out of the country by the railway will be followed by an enormous extension of cultivation. It may even be hoped that emigrants from the overcrowded districts of Behar will not only break up fresh land, but also introduce improved methods of agriculture. Recent enquiries into the cultivation of sugarcane in Manbhoom have shewn that the local cultivators are far behind the ryots of Behar both in their system of tillage, and in their treatment of the canes when cut. Almost the only villages where any improvement on the old methods can be traced are those held by Hindoo middlemen from Behar.

20. *Area and population.*—The area and population of the Chota Nagpore Division, as ascertained in the census of 1881, are as follow :—

		Area in square miles.	Population.
Lohardugga	..	12,045	1,609,244
Hazaribagh	..	7,021	1,104,742
Manbhoom	..	4,147	1,058,228
Singbhoom	..	8,753	453,775
Tributary States	..	16,054	678,002
Total	..	48,026	4,903,991

21. *Strength of the aboriginal element.*—The details of the census of 1881 have not yet been published, but it may be noted that, of the population recorded in the previous census of 1872, 54 per cent. belonged to aboriginal or semi-aboriginal races. Taking the division as a whole, we may fairly assume that at least 50 per cent. of the population are more or less of aboriginal descent. No difficulty therefore need be anticipated in procuring cheap labour for the earthwork of the new railway, even in the most unhealthy parts of the line. The aborigines of Chota Nagpore are conspicuous for their immunity from malarious fever, and it is mainly by labourers of this class, imported into Assam, that new tea gardens are opened out in that unhealthy province.

22. *Exports and Imports.*—The chief exports of the Chota Nagpore Division are the following :—

Rice	..	Chiefly from Manbhoom and Singbhoom.
Indian-corn	..	Chiefly from Manbhoom.
Wheat	..	From Hazaribagh.
Pulses	..	{ Mung (<i>phaseolus mungo</i>). Urid (<i>pashcolus roxburghii</i>) known as biri in Manbhoom. Gram (<i>cicer arietinum</i>) from Hazaribagh.
Oilseed	..	{ Sarsua—mustard. Til (<i>sesamum orientale</i>). Tisi—linseed. Surguja (<i>guizotia oleifera</i>).
Cotton	..	Only from Palamow.
Timber	..	{ From South Lohardugga and North Singbhoom.
Bamboos	..	
Chope	..	Or rope made of jungle fibre.
Babui	..	String made of babui grass.
Tasar silk	..	Manbhoom and Hazaribagh.
Tasar cocoons.		
Hides.		
Horns.		
Shellac	..	From Lohardugga and Manbhoom.
Ghee	..	Manbhoom, Hazaribagh, and Palamow.
Tea	..	Hazaribagh and Lohardugga.
Jungle products.		
Petals of the mohua tree.		
Catechu.		
Resin.		
Stick-lac.		
Dye substances of various kinds.		
Wax.		
Gallnuts (haritaki).		
Coal from Manbhoom and Hazaribagh.		
Iron from Hazaribagh and Lohardugga.		
Mica from Hazaribagh.		

The chief imports are—

European piece-goods.
European twist.
Blankets.
Salt.
Spices.
Betel-nut.
Molasses.
Tobacco.
Umbrellas.
Brass utensils.
Paper.
Wines and spirits.
Oilman's stores.
Gunny-bags—to Hazaribagh.

23. *General course of trade.*—It will be clear from paragraphs 2 to 6 above, and from the annexed map, on which the chief lines of hills have been roughly delineated, that on the

west and south Chota Nagpore is shut in by the hills of the Central Provinces and Orissa, while there are but few practicable outlets through the bordering ranges which mark the descent into the plains of Behar. Hence the main currents of export trade, like the main lines of drainage, follow the natural slope of the country from west and north-west towards the east, converging gradually, after entering Manbhoom district, on the railway stations of Burrakur, Ranigunge, Panaghur, Durgapore, Mankur, and Burdwan, and the trade centres of Bankura, Sonamukhi, Rajgram, Mejhia, Bishanpur and Indas. Three main exceptions to this general rule deserve special notice—

- (i) Of the surplus produce of Palamow and Sirgoojah, which is collected in the marts of Garwa, Daltongunge, Hosenabad, and Maharajgunge in Palamow, nearly the whole is exported to Gya, Shahabad, and Mirzapore, and it may be expected that the Gya-Patna State Railway will attract a continually increasing proportion of the trade of these marts, as well as of Chatra in the west of Hazaribagh.
- (ii) Part of the trade of the north of Hazaribagh, collected in the mart of Mirza-gunge, finds its way into Monghyr district; part is exported from Giridi on a branch of the East Indian Railway, while a considerable portion of the export trade of Chatra goes to Gya.
- (iii) The export trade of that part of Dhalbhoom, the eastern pergunnah of Singbhoom, which lies to the east of the Kapargadi hills, has its natural outlet towards Midnapore. Ghatsilla, the chief village of Dhalbhoom, is not much more than 60 miles from the mouth of the Midnapore canal, and we may expect that, when the roads in Singbhoom are put in order, a very considerable traffic will pass out of the district by this route.

24. *Export routes.*—The areas of country which either now export, or may ultimately be expected to export, by way of Gya, Giridi, and Midnapore, have been roughly marked on the map in blue. At present a certain proportion of the trade, even of these remote parts, flows towards Ranigunge, but it can hardly be expected that this reversal of natural conditions will continue when communications come to be improved. All the exports from the remaining areas find their way sooner or later through Manbhoom district on one or other of the roads marked by red lines on the map to the districts of Burdwan and Bankoora, and in particular to the great mart of Ranigunge, either for local consumption or for transport to Calcutta from stations on the East Indian Railway.

25. *Hazaribagh District.*—Chatra, about 86 miles north-west of the civil station, is the chief market of the Hazaribagh district. Situated on a comparatively level tract between the central plateau of the district and the tangled mass of rock and ravine which forms its western frontier in such a way as to command the openings of the passes from the north-west, west, and south-west, it is well suited by its position to be the distributing market for the country produce of Palamow and the Tributary States. The principal articles imported into Chatra are the following:—Rice, Indian-corn, oilseeds, pulses, and mohua petals are imported from Lohardugga and the Tributary States of Gangpur, Jushpur, and Sirgoojah. From the same places are also brought stick-lac, resin, tusser silk, cocoons, gum, cotton, and unwrought iron. The districts of Gya and Shahabad send wheat, gram, masur (*eryum lens*), khesari (*lathyrus sativus*), and similar cereals, as well as turmeric, pepper, and other vegetables. Zinc and tin are also sent in small quantities from these districts. Tobacco is imported from Patna. English cloth, brass or bell-metal, household utensils, salt, pepper, and *supari* or betel-nut are imported from Burdwan, Ranigunge, and Calcutta. The export trade supplies Lohardugga and the Tributary States with English cloth, salt, pepper, tobacco, household utensils, turmeric, &c. Rice, Indian-corn, marua (*eleusine coracana*), pulses, mohua flowers, and ghee are sent to Gya and Shahabad. Oilseeds, ghee, mohua flowers, gram, oil, and molasses are also exported to Burdwan and Ranigunge. Patna takes iron and certain proportion of stick-lac; but the bulk of the lac which finds its way into the Chatra market is sent to the great lac factories of Mirzapore district. Almost the whole of the Chatra trade is carried by pack-bullocks, as the passes leading up to the town on all sides, except the east, are at present inaccessible to carts.

26. *Trade of Chatra.*—The following estimate of a year's trade between Lohardugga and Chatra is taken from Mr. Spring's notes on the alternative line from Surti through the Damooda valley, Lohardugga, and Sirgoojah (Collection of papers on railway surveys, page 47):—

Exported from Lohardugga to Chatra.		Maunds.	Imported to Lohardugga.		Maunds.
Grain of sorts	...	40,000	Salt	...	7,000
Oilseeds of sorts	...	85,000	Tobacco	...	6,000
Cotton	...	4,000	Goor	...	8,000
Lac	...	3,000	Wheat, spices, cloth...	...	1,000
Iron, gum, mohua, leather, &c.	...	6,000			
Total	...	88,000	Total	...	17,000

Mr. Spring also notices "a comparatively active iron industry" in the town of Taudwa, about 18 miles south-west of Hazaribagh. Taudwa is the centre of the indigenous iron manufacture of the Karanpura valley, and supplies Chatra with a large proportion of the iron afterwards exported to Behar. The export trade of those parts of Hazaribagh, which do not deal through Chatra, is collected at Chumparan, Burhee Baraot, Barkatta, Atka, Bagodor, and Dumri on the Grand Trunk Road; at Mirzagunge, Pachumba, and Giridi in the north-east of the district; and at Gola and Pitarbar in the south-east. The marts on the Grand Trunk Road deal for the most part direct with Ranigunge, but a small proportion of their produce is taken on to the East Indian Railway at Barrakur. Mirzagunge and Pachumba despatch their surplus from Giridi; while Gola and Pitarbar trade with the important mart of Jhalda, 28 miles west of Purulia. Hazaribagh itself exports both by Giridi and along the Grand Trunk Road. It is difficult to foresee the precise effects of the proposed railway extensions on the trade of the Hazaribagh district, but it may be assumed that the Sitarampore-Nagpore line will deprive Chatra of the export trade which it now attracts from South Lohardugga, Jushpur, and part of Sirgoojah, and that the extension of the Patna-Gya line into Palamow will still further curtail the agency business from which the town derives its importance. At present the railway station at Giridi is cut off from the main stream of trade along the Grand Trunk Road by the unbridged Burrakur river, which is impassable for days at a time during the rains, and very destructive to carts even during the dry season, on account of the steepness of its rocky banks and the depth of sand in its bed. Carters from Chatra and the marts on the Grand Trunk Road, halting at Gobindpore on their way to Ranigunge, have repeatedly assured me that, if the Burrakur were bridged, they would take their goods to Giridi. We may expect then that, when the recently sanctioned bridge over the Burrakur is completed, the traffic of the Giridi station will shew a remarkable increase; while a corresponding diminution will take place in the trade of Ranigunge. The trade of Gola and Pitarbar will, I think, ultimately come on to the Sitarampore-Nagpore line, either at Raghunathpore or Purulia. The old Trunk Road, running from Raghunathpore through Chas to Hazaribagh, has recently been repaired in Manbhoom, and promises to serve as an important feeder to the railway. At present it joins the road from Ramgurih through Gola, to the village of Mahooar on the Hazaribagh border, but the old line running direct to Hazaribagh is still in existence, and the question of putting it in thorough repair will have to be considered when the railway comes into working.

27. *Lohardugga District.*—The principal seats of trade in Lohardugga district are Garwa, Hosenabad, Daltongunge, and Moharajunge in the Palamow sub-division, and Ranchee, Lohardugga, Palkot, Lodhma, Biru, Baudu, Tamar, and Sili in the head-quarters sub-division. Garwa, in Palamow, forms the distributing trade centre for the surplus produce of great part of Sirgoojah, of the Tributary States further west, and of Palamow sub-division itself. Garwa market is held during the dry season on the sands of a river, and is one of the largest in the Chota Nagpore Division. Stick-lac, resin, catechu, cocoons of tussar silk, hides, rice, oilseeds, ghee, cotton, and iron are collected there, and at the other Palamow marts mentioned above, for export to Chatra and Gya. Piece-goods, brass vessels, blankets, silk, salt, tobacco, spices, drugs, and beads are imported from Behar for local consumption, and to supply the stocks of itinerant merchants who take these articles into Sirgoojah and Korea. Nearly all the trade of the head-quarters sub-division flows eastward to the mart of Jhalda in Manbhoom, and thence through Purulia to Bankoora and Ranigunge. The only exceptions to this rule, are—

- (i) A small area in the west of the district roughly marked off on the map by the dotted line drawn from Biru through Palkot to a point about 12 miles east of Lohardugga town, which at present sends its surplus produce by pack-bullocks to Chatra; and
- (ii) a still smaller area in the south-east which exports through Patcoom to Chandil, and thence by Burabazar and Manbazar to Bankoora.

28. It appears, however, that, as the roads leading eastward are gradually improved and rendered passable for carts, the proportion of the export trade flowing towards Ranchee and Jhalda is even now tending to increase, while the attraction of Chatra shews signs of declining. At present, no doubt, the tendency I speak of is not very conspicuous; but in the ordinary course of events the primitive modes of transport on which the Chatra trade depends are bound to be beaten out of the field by wheeled transport plying along more direct and more convenient routes. Chatra owes its predominance as a trade centre for Western Chota Nagpore to the various causes which have delayed the construction of cart roads in the west and south-west of Lohardugga district. As soon as the system of roads planned for the district is completed, it may be assumed that the entire traffic of the head-quarters sub-division and of the Tributary States, except Chang Bhakar and North Sirgoojah, will flow eastward towards Jhalda. At what points it will strike the new railway is a difficult question to determine beforehand; but I may mention that the Deputy Commissioner of Lohardugga agrees with me in thinking that the trade of the northern portion of the area in question, including the marts of Lohardugga, Ranchee, and Silli, will go to Purulia; that the traffic of the south, collected at Palkot and Biru, will come on to the line at Lamgarth and Chakradharpore, and that the south-eastern corner of the district represented by the mart of Tamar will export by way of Kharsawan or Chandil. As soon as the railway is sanctioned, the District Road Committee will probably set about aligning feeder roads to some of these points.

29. *Singbhoom District.*—The chief marts of Singbhoom district are Chyebassa, Chakradhupore, Sonua, Kharsawan, Saraiola, and Haldipukur in Singbhoom proper, and Ghatsilla and Bharagora in the outlying pergunnah of Dhalbhoom. Dhalbhoom, which is cut off from the rest of the district by a range of hills traversed only by a single pass, trades with Midnapore. The exports of the central and western portions of the district are sent as a rule to Ranigunge and Bankoora. Produce is also said to be exported to Gya through Ranchee, Tandwa, and Chatra. Most of the district trade is at present in the hands of petty itinerant traders, who move about from village to village during the cold weather, purchasing country-produce or taking it in exchange for salt, which they import monthly on pack-bullocks from Ghatal and Midnapore. When the railway is opened, it will probably absorb the whole of the district trade as soon as the local dealers have had time to realize the changed conditions. At first, perhaps, the eastern villages of Dhalbhoom will continue to trade with Ghatal and Midnapore; but when a good road has been made through the Kapargadi pass, and a few more Marwari merchants have settled at Chyebassa, that town will become the main centre of trade for Singbhoom, Keonjhar, and Mourbhunj.

30. *Manbhoom District.*—The peculiar position of Manbhoom in relation to the trade of Chota Nagpore has been remarked upon above in explaining the routes by which the produce of Lohardugga and part of Hazaribagh reaches the East Indian Railway. Three main lines of export cross the district from west to east—the Grand Trunk Road with *chattis* or roadside marts of Topechansi, Rajgunge, Govindpore, Nirsa, and Chirkunda; the provincial road from Ranchee to Bankoora passing through Jhalda and Purulia; and a southern line, imperfectly defined by any finished roads, which brings produce from the south and south-east of Lohardugga through Chandil, Barabazar, and Manbazar to Bishanpore and Bankoora. From south to north these lines are crossed by the main road from Chyebassa through Purulia to Burrakur, passing the marts of Chandil, Purulia, and Raghunathpore. An incomplete line running from north-west to south-east through Chas and Raghunathpore towards Raneegunge promises to bring the produce of south-eastern Hazaribagh, and perhaps of a larger area, on to the railway at Raghunathpore. A glance at the annexed trade map will show the positions of the chief marts in Manbhoom and their relations to the existing roads and the new railway. Clearly the traffic along the Trunk Road will not seek the new line. Indeed, by the time the line is open the volume of this traffic will probably have been much reduced by the bridging of the Burrakur river between Dumri and Giridi, so that the portion of the Trunk Road passing through Manbhoom will merely serve the local trade of the Govindpore sub-division, and the large export of coal from the collieries between Nirsa and Burrakur. All the traffic on the other routes described will be carried by the new railway. How far the influence of the line will extend in an easterly direction depends upon causes which it is impossible to analyse here. My own opinion is that, after a short period of adjustment, during which new centres of trade will be formed at Chandil, Purulia, and Raghunathpore, the entire trade of Eastern Manbhoom and of the western pergunnahs of Bankoora will be drawn on to the new line, that is to say, the centres of attraction for trade purposes will move to the west and occupy points on the railway.

31. *Import trade.*—In describing the trade routes of the division, I have discussed the question almost entirely in terms of export. The import trade follows the same main lines as the export trade, and needs no special description. Places which export to stations on the East Indian Railway procure their imports from the same source, and this holds good equally in the case of the areas exporting to Gya, Mirzapore, and Midnapore.

32. *Attraction of Raneegunge.*—It was remarked above that some of the exports of Chatra and Hazaribagh are sent to by cart along the Grand Trunk Road to Burrakur or Ranigunge. The preference for Ranigunge over the two nearest stations on the line is mainly due to the fact that the trade of Ranigunge is incomparably larger than that of either Burrakur or Giridi, and that consignors can count upon disposing of their entire produce to a single wholesale dealer, and getting at once whatever they may require for the return journey. At Burrakur or Giridi, where the machinery of trade is as yet imperfectly developed, a consigner of country produce would probably have to dispose of his stock in dribblets, and to pick up his return load of piece-goods, salt, and tobacco from half of a dozen different dealers. For this reason, and probably also because the consignors have running accounts with the large merchants at Ranigunge, the majority of carts exporting country produce travel for their market 70 miles beyond Giridi, their nearest railway station, and 25 miles beyond Burrakur. The point is chiefly of importance as illustrating the indifference to delay, and the reluctance to abandon traditional routes and methods which are so characteristic of the ordinary country trader.

33. The articles thus sent are oilseeds, gram, ghee, moluca, molasses, and lac—oilseeds forming about 90 per cent. of the trade. For the most part the carts go direct to Ranigunge, passing within 26 miles of Giridi, and within one mile of Burrakur station. They return to Chatra with salt, piece-goods, brass utensils, pepper, turmeric, and tobacco. While at Ranigunge, I asked some of the leading merchants why this considerable body of trade was diverted from Gya, apparently its natural outlet, to so distant a point as Ranigunge. The answer was that oilseeds, the staple export being largely grown in Gya, were sold there in ordinary years at the same price as in Chatra; while at the ordinary rates of cart-hire a profit could be made by sending them to Ranigunge.

34. *Minor trade agencies.*—It is not pretended that the foregoing paragraphs give anything more than a very general outline of the operations of trade over a large province. No reference has been made to the weekly markets held in all large villages, to the small

travelling dealers (*beparis*) or to the agents of large merchants who settle for a time at convenient centres and buy up the produce of the neighbourhood. In a country where but few large centres of trade exist, it is from sources such as these that the chief marts shown in the map derive their stocks for export, and the imports are distributed through the same channels. No statistical record of these operations is possible. As Chota Nagpore is gradually opened up by the railway and by improved roads, we may expect that new marts will spring up, and that the trade of the division will tend to concentrate itself; while its itinerant dealers, and transport by means of pack-bullocks, will tend to disappear.

85. *i. District trade reports. Data for estimate of trade.*—I will now examine at length the various data which exist for estimating the probable yearly goods traffic which the Nagpore Railway may count upon carrying from and to places in Chota Nagpore. The first and most obvious source of information is the reports of the district officers, which take the form either of special reports on the trade of the district, or of sections devoted to that subject in the General Administration Reports. In most cases the information given is of the vaguest character, and throws very little light even on such an elementary matter as the main lines which the trade follows. In Maubhoon considerable attention has been paid to the question of trade statistics, and for the last three years, special reports on the subject have been drawn up by a native officer of great local experience. Some of these figures will be reproduced and examined below. Clearly they have been compiled with great labour, and aim at a higher standard of completeness than those supplied from other districts of the division. They are based almost entirely on the following data:—

- (a) Statements of local traders resident in Purulia as to the quantity or value of the stocks passing through their hands during the year, and the proportion of such stocks drawn from, or exported to, districts other than Maubhoon. Traders from the interior of the district were questioned on these points when they visited Purulia, and in all cases from 30 to 50 per cent. was added by way of correcting the mahajan's natural tendency to understate his stocks.
- (b) Estimates made by local traders, at the instance of the compiling officer, of the quantity or value of particular articles exported from, or imported into, the whole district.
- (c) Estimates framed by the compiling officer of the quantity or value of particular articles which the population of the district ought, on an average, to consume.
- (d) In some instances the traders' books were referred to.

86. With regard to (a), it would be waste of time to dwell upon the various sources of error which such a method of enquiry involves. Every local trader is possessed with a constant dread of enhanced license-tax, and regards statistical enquiries of any kind with the more suspicion, because he is quite incapable of understanding the remote general objects which such enquiries have in view. He may believe that the officer with whom he is talking at the moment has no ulterior designs in respect of taxation, but nothing would persuade him that incautious disclosures made by him as to the extent of his dealings might not hereafter be used by another officer or another department for the purpose of assessing a new tax or enhancing an old one. The clumsy expedient of adding a uniform percentage to the statements of stock could only yield correct results if every man lied in exactly the same ratio to the truth. In the present case, as the mahajans were informed that this correction would be applied, there can be little doubt that many of them made allowance for it in framing their statements. As to (b), no one who has seen anything of the mahajan class in Chota Nagpore can have failed to be struck by their peculiar inability to take a general view of any subject. Each man knows his own business, and nothing more; and it is simply preposterous to expect him to be able to estimate the exports or imports of a whole district, which to him represents merely a set of arbitrary boundaries laid down for the convenience of the courts. Least of all would he be able to distinguish local exports and imports from goods in direct or indirect transit to other districts. At the best, moreover, the enquiry was only partial. It is not pretended that all the traders in the district were consulted, and that the figures represent the total of their statements and estimates. On the contrary, the compiling officer admits that he never left Purulia, and that he merely took any opportunity that offered of questioning traders from the interior who happened to come to the district head-quarters.

86. *ii. Special enquiries from mahajans.*—In January last I spent several days in Ranigunge in attempting to ascertain from the local merchants, not the actual quantities of goods consigned to them from Chota Nagpore, but the *proportion* of the traffic passing through their hands which come from that part of the country. To ask them actual quantities would, of course, have been futile, as even if they had placed their books absolutely at my disposal, it is doubtful whether the necessary particulars would have been on record, and in any case the labour of compilation would have been prohibitory. I hoped, moreover, to disarm their suspicions by abstaining from all enquiries as to the extent of their business, and confining my questions to the *percentage* drawn from, or exported to, Chota Nagpore. After visiting every substantial merchant in the town, I gave up the attempt as hopeless for several reasons.

37. In some cases the dealers themselves had the vaguest ideas as to the source and destination of their own business; they did not know which of the Chota Nagpore marts

served particular districts, or what extent of country was included in the Chota Nagpore Division. Though shrewd enough in points of detail as to prices and carriage, they were curiously ignorant as to the general course of trade, and the possible changes arising from the extension of railways. Goods came to them because they had always come, and they saw no reasons for anticipating changes. It might be that the opening of the Gya Railway had reduced the trade with Chatra, but they could not say to what extent, or whether the reduction was likely to be permanent. Others affected great readiness to impart information, and improvised extravagantly large statistics of the traffic, which a glance at the railway figures shewed to be impossible. The Marwaries, among whom are the chief merchants of Ranigunge, took a different line. Their leading man went through the railway statistics with me, and after consulting his countrymen, gave me a rough statement of the percentage of each article entered in those returns which was exported from, or imported into, Chota Nagpore. He said, for instance, that 25 per cent. of the piece-goods, salt, flour, betel, and turmeric, appearing in the railway returns was intended for Chota Nagpore, and that 18 per cent. of the oilseeds came from Chota Nagpore. He let out, however, in conversation that, in his opinion, a line joining the East Indian Railway at Sitarampore would in a few years ruin the native trade of Ranigunge. All the traders along the new line of rail, who now employ agents in Ranigunge, would, he said, deal direct with Calcutta, while men off the line would arrange their business through agents at Purulia, Chyebusa, and other new centres of trade. Ranigunge would cease to be the chief distributing centre for Chota Nagpore, and the men in whose hands the trade is now would either have to accept the loss of a safe and lucrative commission business, or to start afresh in one of the new centres further west. The latter alternative would be hardly less distasteful to them than the former. Large sums have been spent by men of this class on substantial masonry buildings in Ranigunge. Most of them have permanently settled in the place, and do not contemplate returning to their own country. If they are driven to transfer their seats of business to places on the line, they can only do so at a heavy loss; nor will the new business at any one centre be such as to compensate them for the loss of the old. The effect of the new railway will be to dissipate and distribute among several centres the business hitherto concentrated at Ranigunge. From the tone adopted in discussing the matter by the most influential and intelligent native merchants, I am satisfied that they are, on the whole, opposed to the project for a line to Sitarampore, and that their statements as to the proportions of the existing trade which are concerned with particular localities cannot be regarded as trustworthy. Information derived from them is vitiated by their special bias against the present scheme, as well as by the general prejudices which they share with the rest of their class.

83. iii. *Estimates from population not generally applicable.*—To argue from the recorded population of a district to its probable ultimate consumption, is no doubt a legitimate process, but it can only be applied with confidence in the case of salt, and perhaps of some

* NOTE.—This is the standard taken by Sir John Strachy, at page 290 of "The Finances and Public Works of India." Mr. Power, the Deputy Commissioner of Lohardugga, has enquired into the subject in that district, and finds that the "average annual consumption, if anything, exceeds Sir John Strachy's standard." The Bengal Trade Report for 1881-82 puts the average consumption per head as follows:—

Bengal	Orissa
Behar.	Chota Nagpore.

staple food-grains. Thus in the case of salt, we can say that 17lbs. is the amount required during the year by an adult, and that 12lbs* is the average annual consumption in India per head of population, and we may infer from this that, with improved communications and a low duty, the Chota Nagpore Division may be expected to consume perhaps 700,000 maunds of salt. An attempt has been made by the compiler of the Manbhoom trade reports to calculate the import of European piece-goods on a somewhat similar method. Taking the population of the district

at 1,042,117, as recorded in the last census, and deducting 281,174 for children and persons who do not wear European cloth, the remaining 760,943 persons are divided into four classes, expending, respectively, Rs. 75-4-1 and 8 annas per head on European cloth during the year. The number of persons in each class is then estimated, and their consumption calculated on the following scale:—

	Rs.	A.	P.	Rs.
2,000 of the upper class spending per annum	75	0	0	1,50,000
200,000 " middle " " "	4	0	0	8,00,000
200,000 " cultivators " "	1	0	0	2,00,000
358,943 " poorer classes " "	0	8	0	1,79,471
760,943 persons spend per annum	.....	.....	.....	13,29,471

Deducting from this Rs. 3,62,000, being the value of twist imported from Calcutta, to be made into cloth in the district, the remainder, Rs. 9,67,471, is taken as the minimum value "of piece-goods imported from Calcutta for the consumption of the people of Manbhoom." It is not clear why a smaller amount was entered in the figured estimate for 1881-82, and subjected to a further deduction on account of re-exports; but the whole calculation rests upon such highly conjectural data that it would be waste of time to examine it in detail. Again, the import of salt is calculated on the assumption that 992,452 men consume 1 tola a day, or 456 sers (say 9lbs.) in the year. I have not ascertained why the salt-consuming population was taken at this particular figure, which corresponds neither with the total population of the district, nor with the total number of males or heads of families recorded in the last census.

39. A similar form of argument is used by Mr. Parker in paragraphs 84 to 87 of his report * on the preliminary surveys for the Nagpore Railways and the annexed statement, and is mentioned in the

* No. 584, dated 14th June 1882.

Bengal Government letter forwarding the report to the Government of India as on the whole the most reliable method of estimating the probable receipts of the line. To this I would add that, while Mr. Parker's calculation is probably sound enough as an estimate of the minimum traffic, it must necessarily reproduce the defects of the returns upon which it is based. These returns, I believe, are largely derived from a system of road registration. I have had some experience of road registration in Manbhoon, where it is conducted under fairly favourable conditions, and the stations are so placed as to be open to constant supervision. In my opinion every system of the kind greatly understates the amount of the traffic which it professes to record. The men who keep the registers are ignorant and ill-paid, they do not understand the object of their work, and they take as little trouble over it as possible. Numbers of carts evade the registering station, or slip past it during the night, and the carters themselves understate the quantities of goods they are carrying. What the percentage of error may be it is impossible to say precisely, but in many cases I believe it to exceed 25 per cent. Of course it would be a random mode of procedure to add that percentage to Mr. Parker's figures; but if this were done, I believe it would be borne out by the working results of line.

40. *iv. Statistics of the East Indian Railway.*—I have already explained, in paragraph 23 above, that the great bulk of the existing trade of Chota Nagpore finds its way by various routes to the stations on the East Indian line between Burrakur and Burdwan. In order to ascertain what light the traffic returns of the East Indian Railway would throw upon the prospects of the new line, I obtained from Mr. Bradford Leslie a statement shewing in detail the quantity of each article exported from, and imported into, each of the stations from Burrakur to Burdwan inclusive during the year 1882. Taking this statement as a basis, I hoped to be able to ascertain from the chief dealers at each station what proportion of the goods shown in the railway statistic came from, or went to, Chota Nagpore. My experience at Ranigunge shewed that it was impossible to separate the Chota Nagpore traffic from the traffic of the area intervening between the proposed new line and the East Indian Railway. Ranigunge was the most promising place for the experiment, as the Chota Nagpore trade goes there direct by cart, and is not filtered through a number of different marts before it reaches the rail. In the case of Panagarh, Mankur, and Burdwan, the statistics probably include a certain proportion of Chota Nagpore goods; but these are consigned, in the first instance, to merchants at Bankoora, Bishenpore, Sonamukhi, Krishnagore, and other intermediate marts, and reach the railway as exports from those places, not from Chota Nagpore. At these stations the attempt to trace back any branch of trade to its sources would have been even a greater failure than at Ranigunge. For these reasons the returns of the East Indian Railway are not of very precise statistical value for my present purpose, except in the case of articles produced exclusively in Chota Nagpore, and of stations like Sitarampore and Burrakur, which deal only with that part of the country. They suggest, however, some important inferences as to the traffic of the new line, and they serve to illustrate and supplement the defects of the statistics collected by actual registration in Manbhoon district. I shall refer to them largely in discussing the trade of particular articles.

41. *v. Statistics of local registration.*—The registration figures, imperfect though they are, form the only local statistics which can pretend to even approximate accuracy. The system on which they are collected requires some explanation. For the last thirty years or so, *serais* or rest-houses for carts and travellers have been kept up at regular intervals along the Grand Trunk Road. In that portion of the road which passes through Manbhoon, it has been the practice for many years past to prohibit carters from halting for the night anywhere except in a *serai*. How far this practice is based upon any formal order is a point I have never been able to clear up. Certainly no such order is on official record in the district. But the custom, which dates back to times when the Trunk Road was unsafe for travellers, is well known, and is in the main enforced by the mounted patrol on the road. A fee of one pice is paid for each cart, and the right to collect these fees is farmed out yearly by public auction, the *serais*, wells, &c., being repaired from the proceeds. In February 1881, while in charge of the Govindpore sub-division, I made arrangements for recording daily the number of carts passing through the *serai* at Govindpore on the Grand Trunk Road, with the starting place and destination of each cart, and the quantity of goods carried. The system was carefully supervised, and the figures are believed to be substantially correct. They certainly do not exaggerate the traffic, as it was to the interest of the farmer of the *serai*, by whom the register was kept, to understate the number of carts, and thus reduce the apparent profit on his lease. On the other hand, the conformation of the country at Govindpore renders it impossible for carters to evade the *serai* by going off the road, while the patrol system prevents them from halting at intermediate points, and passing the *serai* during the night, perhaps 10 or 15 per cent. might be added to make up for carts which escaped registration, or were purposely omitted by the farmer; but, on the whole, the conditions are so favourable to correct registration, that it is doubtful whether any correction need be applied. In August 1881, before leaving for Hazaribagh, I compiled the statistics thus collected for the six months from February to July 1881 inclusive, and submitted a report on the subject to the district officer, suggesting the introduction of a system by which it was hoped that the whole of the traffic likely to be carried by the proposed railway (southern route) might be regis-

tered at certain points in the Manbhoom district by a salaried agency, such as is employed to record the trade on the roads leading into Calcutta. Nothing was paid to the farmer of the *serai* at Govindpore. He was merely supplied with paper and told to record certain particulars, it being further understood that the totals were made up for my information only, and were not to be made use of at the yearly auction of *serais*. The proposal was recommended by the late Deputy Commissioner to the Commissioner of the Division, but it was lost sight of in consequence of Mr. Hewitt's absence on leave. In October 1881 a new Sub-Divisional Officer stopped the registration of traffic at Govindpore. On my return to Manbhoom in April 1882, I moved the Deputy Commissioner to start registration in the head-quarters sub-division on the Govindpore unpaid system, and since June 1882 traffic has been recorded at the *serais* at Govindpore, Purulia, and Nadiara. These points are marked with red flags on the map.

42. If the system had worked at head-quarters as well as it did at Govindpore, the returns from Nadiara on the direct road from Ranchee to Bankoora, Ranigunge, and Burrakur would have shewn approximately the whole of the trade with Jhaldia, Ranchee, and other centres farther west; while the Purulia station would have recorded the trade of Southern Manbhoom and of all Singhbhoom, except the area which deals with Midnapore. Experience, however, has shewn that of the Singhbhoom trade a large portion evades the Purulia *serai* by taking advantage of a cross-road skirting the south of the town and joining the main road to Bankoora some two miles to the east of the *serai*. Considerable quantities of goods from Singhbhoom are consigned to merchants at Chandi, and find their way to Bankoora by a rough tract through Burrabazar and Manbazar; some are consigned to merchants at Purulia, and are never registered at all, as the carts have no occasion to use the *serai*. Moreover, *serais* have only been introduced into the head-quarters sub-division within the last two or three years; the carters do not see the advantages of them, and prefer camping out under trees; they will even make a considerable detour to avoid paying the fees, and in this part of the district we have neither ancient custom nor a regular road patrol to enforce the order that carters must halt at night in a *serai*. It would be out of place to discuss, in this report, the policy of putting pressure on the cartmen to induce them to use the *serais*; but I may mention that I made enquiries on the subject in Ranigunge, and found that the leading merchants there not only approved of the system, but had so far recognised it as to admit charges for *serai* fees as part of the standard cart hire from Ranigunge to Raghunathpore and places further west.

43. It follows, from what has been said in the last paragraph, that the percentage to be added to correct understatement in the Purulia and Nadiara figures, is much larger than in the case of the statistics collected at Govindpore. I would estimate it at from 40 to 50 per cent. in the case of Purulia, where several sources of error effect the total, and at about 25 per cent. in the case of Nadiara, where the routes available for evading the *serai* are fewer, and we have only the novelty of the system to look to. In dealing with the trade in particular articles, I have in every case shewn the actual figures, and have not attempted to correct them by adding a conjectural percentage.

44. In the following paragraphs the statistics, such as they are, derived from the railway returns and the records of local registration, are reproduced and compared, and an attempt is made to estimate approximately the quantity of each article which the proposed railway may be called upon to carry. From the nature of the case, only an approximate estimate is possible. I have endeavoured, however, to bring together under the head of each article all general information that has any bearing upon its distribution in Chota Nagpore, and thus to supplement, as far as possible, statistical defects. For convenience of reference, I have followed the alphabetical arrangement of the railway returns:—

IMPORTS.

45. *Beer*.—During 1882 the net imports of beer, other than commissariat beer, into the stations from Burdwan to Burrakur inclusive, amounted to 2,075 maunds. The largest quantities were to—

	Mds.		Mds.
Burdwan	.. 341	Assensole	.. 960
Ranigunge	.. 372	Burrakur	.. 321

Probably no portion of the imports of Burdwan or Assensole passed on to Chota Nagpore. At both places there is a large European community, and the imports shewn in the returns may be taken to have been consumed locally. At Ranigunge the European community is now very small, owing to the transfer of all railway servants to Assensole. Lohardugga and Singhbhoom get their supplies from Ranigunge; while Manbhoom for the most part imports through Burrakur. Having regard to the numbers of the Europeans in the three districts, the imports of beer may be taken on a moderate estimate, at from 300 to 400 maunds a year. Beer is not separately shewn in the statistics of trade registration. It comes up in boxes, of which neither the cartmen nor the *serai* farmers would know the contents.

46. *Betel-nuts and leaves*.—The railway figures shew the following net imports for 1882:—

	Mds.		Mds.
Burdwan ..	2,351	Sitarampore ..	576
Panaghur ..	380	Burrakur ..	599
Durgapore ..	81		
Ondal ..	4		16,649
Ranigunge ..	11,874		
Assensole ..	784		

Pán (piper betel) and *supari* (areca catechu) are hardly grown at all in Chota Nagpore, the climate being too dry for either to flourish; consequently the entire province, except the areas dealing with Gya, Guridi, and Midnapore, draws its supplies of this indispensable luxury from Bengal proper. All natives agree in describing the consumption as very large. We know that numerous quantities of betel are grown in Bankoora and Burdwan, and in view of this fact, it would hardly be unfair to assume that these districts produce enough to supply themselves, and that the railway imports represent the amount sent westward to meet the demand from Chota Nagpore. It is possible that this may understate the case, and that Chota Nagpore not only takes off the entire surplus of Burdwan and Bankoora, but imports through the East Indian Railway besides. The Ranigunge dealers, whom I consulted on the point, thought that one-fourth of the imports by rail into Ranigunge passed on into Chota Nagpore, but their bias against the line was so pronounced, and their incapacity to deal with large estimates so apparent, that I attach little importance to their opinion. On the whole, I think 8,000 maunds would be a reasonable estimate of the amount the railway will carry during the year. Under the head of betel the road registration returns shew for the last seven months of 1882—

153 maunds registered at Purulia.

28 " " at Nadiara.

153

or a yearly average of 252 maunds. This does not necessarily affect the correctness of the rough estimate given above. Both *pán* and *supari* are usually brought up in the same carts with salt, but only the salt which makes up the chief part of each load is declared by the cartmen; while the *pán* and *supari* escape registration.

47. *Blankets, country*.—The railway imports are—

	Mds.		Mds.
Burdwan ..	41	Sitarampore ..	64
Kanoo ..	42	Burrakur ..	430
Panaghur ..	27		
Ranigunge ..	395	Total ..	1,095
Assensole ..	96		

The whole of the imports of Sitarampore and Burrakur, and 200 maunds out of the imports of Ranigunge, may be taken to represent the Chota Nagpore demand—in round numbers 700 maunds. There is a large and steady demand for blankets in Chota Nagpore. On the plateau of Hazaribagh and Ranchee the cold is intense in winter, and a large supply of blankets is required every year for coolies migrating to Assam.

48. *Brass and brass-ware*.—Are imported from Ranigunge and Bankoora. The Chota Nagpore braziers do not make enough for local wants, and their workmanship is clumsy. A good deal of brass is imported to be worked up locally into the massive ornaments worn by women of the aboriginal races. The railway figures for 1882 shew the following net imports:—

	Mds.	
Burdwan ..	108	
Kanoo ..	886	
Mankar ..	8	
Panaghur ..	587	} Supplying Bankoora.
Durgapore ..	1,008	
Ranigunge ..	456	
Burrakur ..	538	
Total ..	3,582	

Local registration shews 197 maunds at Purulia and 566 at Nadiara for the last seven months of 1882, or an average of 1,308 for a year. Comparing the two sets of figures, and allowing for the large omissions in registration at Purulia, arising from the causes explained in paragraph 42 above, I think 2,000 maunds may be taken as a minimum estimate of a year's imports.

48. *Cotton and yarn.*—Under this head the railway figures amount to 30,945 maunds, of which Ranigunge contributes 12,645 and Burrakur 10,065, while the local registration returns shew—

	Mds.
At Purulia	8,475
At Nadiara	661
Total ..	4,136

or an average yearly import of 6,440 maunds. With regard to the latter figures, it must be remembered that Raghunathpore and Chasnanda, the two chief centres of the local weaving trade, take up large quantities of thread which never reach the registration stations at all. Taking this fact into account, and particularly having regard to the large import into Burrakur, which supplies Chota Nagpore, I would estimate the imports of cotton and yarn at about 12,000 maunds in the year. The quantities registered locally came from Burrakur, Ranigunge, and Bankoora, and were destined for Purulia, Jhalda, Chyebassa, and two small marts in Manbhoom, which are not shewn on the map.

49. *Grain, oats.*—During 1882 14,850 maunds of oats were imported into Burrakur. It is said to be ground up with gram and Indian-corn into a peculiar kind of *sutloo*. Most of the import of oats went to Jhalda.

50. *Grain, wheat.*—The railway returns shew a net import into Ranegunge of 28,271 maunds of wheat during 1882, and of 120 maunds into Burrakur. Wheat is not very much grown in Chota Nagpore, as it requires irrigation and more care than the average cultivator is willing to bestow upon any crop. The average import may be taken at 10,000 maunds.

51. *Other grains and pulses.*—Under this head the railway figures shew net imports amounting to 2,99,354 maunds distributed among the following stations:—

	Mds.		Mds.
Burdwan ..	1,26,451	Assensole ..	4,662
Kanoo ..	263	Sitarampore ..	4,151
Mankar ..	3,400	Burrakur ..	20,661
Panaghur ..	10,107	Total ..	2,99,354
Durgapore ..	2,347		
Ondal ..	14		
Ranigunge ..	1,27,098		

It is impossible to analyse these figures. At Burrakur I was told that *khesari*, *musari*, *dalai*, and peas were included under the head of "Others." In 1881-82 the import of grain into Manbhoom was estimated at 8,000 maunds. Large quantities are also sent to Singbhoom and Lohardugga. Only 948 maunds, equivalent to a yearly average of 1,620 maunds, were registered locally. All of this was consigned to places in Manbhoom. Arguing from the railway figures, it seems probable that the 25,000 maunds imported into Burrakur and Sitarampore were destined for Chota Nagpore, but no more definite conclusion than this can be drawn from the materials as they stand.

52. *Gunny-bags.*—The railway statistics give a net import of 6,949 maunds, of which—

	Mds.
Ranigunge took	1,931
Sitarampore	484
Burrakur	364
Total ..	2,779

Only 60 maunds were registered locally, all for Jhalda. Doubtless there is a steady demand of gunny-bags for use in the export trade, but no reliance can be placed on any estimate of quantities. It deserves notice that the large traffic carried by pack-bullocks depends entirely upon gunny-bags. There are several devices for carting grain, stick-lac, tusser, cocoons, &c., in bulk, but the couple of maunds or so which form a bullock's load must be packed in bags, and the bags must be equal to standing a considerable strain and much knocking about.

53. *Jaggree and Molasses.*—The net imports by rail were—

	Mds.		Mds.
Burdwan ..	2,053	Assensole ..	129
Mankur ..	255	Sitarampore ..	83
Panaghur ..	989	Burrakur ..	669
Durgapore ..	88	Total ..	28,585
Ondal ..	49		
Toposi ..	15		
Ranigunge ..	23,808		

The local returns shew 784 maunds registered in seven months, being an average annual import of 1,344 maunds. Sugarcane cultivation is very backward in Chota Nagpore. Inferior kinds of cane are grown, manure is very sparingly used, and the methods of

extracting the juice are primitive and wasteful. These facts may serve to explain the large imports of jaggree and molasses into Ranigunge, a place which clearly does not require 28,000 maunds for local consumption. I would estimate the Chota Nagpore demand at about 15,000 maunds in the year.

54. *Oil in barrels, cases, and skins.*—Under this head, which includes kerosine oil, the railway returns show a net import of 16,246 maunds, Raneegunge taking 5,697, Assensole 1,910, Sitarampore 1,263, and Burrakur 207. Thus the import of the stations which ordinarily supply Chota Nagpore comes to 9,077 maunds. Only 185 maunds were registered locally. Kerosine oil is widely known and much used all over the division, not only for lighting purposes, but for outward application in diseases affecting the skin. On the data as they stand, 5,000 maunds might be taken as a rough estimate of the annual imports of oil, but the estimate would have no statistical value. We can only say that both kerosine and coconut oil are imported from Bengal, and that the import will certainly increase largely when the railway is opened.

55. *Oil-cake.*—The same remarks apply to oil-cake. A small import of 284 maunds was registered, while the railway figures give a total of 68,070 maunds, of which—

	Mds.
Ranigunge took	81,224
Sitarampore „	1,760
Burrakur „	2,186
Total	85,120

Here, again, no estimate is possible, but it is tolerably certain that a large portion of the imports of these three stations found its way to Chota Nagpore.

56. *Paper.*—The railway figures show net imports of 733 maunds to Burdwan, 28 to Panaghur, and 246 to Ranigunge—in all 1,007 maunds during 1882. For the official year 1881-82, the value of imports of paper into Manbhoom district was estimated at Rs 10,000. No estimate of quantities can be framed. So far as I can ascertain, paper is not manufactured locally.

57. *Piece-goods.*—Under this important head the net imports for 1882, according to the Railway returns, were as follow :—

	Mds.		Mds.
Burdwan	14,118	Assensole	516
Kanoo	55	Sitarampore	154
Mankar	720	Burrakur	22,587
Panaghur	3,925	Total	62,823
Rajbandh	24		
Durgapore	283		
Ranigunge	20,441		

During the last seven months of 1882 there were registered in Manbhoom—

At Govindpore	433 maunds	for Chutra and Ranchi,
At Purulia	3,036 „	for Purulia and Jhalda,
At Nadiara	4,164 „	for Jhalda and Ranchi,

giving a yearly average import of 18,000 maunds. Comparing the two sets of figures, and having regard to the fact that the imports of Singhbhum seem to have escaped registration, I should estimate the Chota Nagpore imports of piece-goods at 80,000 maunds. This estimate is, I think, borne out by the large imports into Ranigunge and Burrakur. Roughly speaking, the whole of the Burrakur imports go to Chota Nagpore, and in this case I should assume that half of the Ranigunge imports finds its way to this division. I have not attempted to account for any portion of the imports of Burdwan and Panaghur, but there can be no doubt that some of these goods come into Chota Nagpore through Sonamukhi, Bisenpore, and Bankoora. The consumption of European piece-goods has increased greatly of late years among the aboriginal and semi-aboriginal races of the division. In particular the exports from Lohardugga to the Tributary States are said to be developing rapidly; but as they enter and leave the district at numberless points no accurate account of the quantity can be kept. It is extremely difficult to register trade carried on pack-bullocks, as the drivers can leave the road at will to avoid the annoyance of being stopped and questioned about their loads.

58. *Potatoes.*—The Railway returns show net imports amounting to 21,167 maunds during 1882, of which—

	Mds.		Mds.
Ranigunge took	18,247	Burrakur	2,306
Assensole	2,363	Total	18,466
Sitarampore	550		

Only 63 maunds were registered at Purulia as imported from Bankoora and Ranigunge, but this very much understates the facts. Potatoes are very little grown in Chota Nagpore, and the existing imports, whatever their amount may be, will increase enormously directly

the Railway is opened. Perhaps 8,000 maunds may be taken as a conjectural estimate of the demand.

59. *Salt*.—The Railway statistics give the net imports for 1882 as follows:—

	Mds.		Md.
Burdwan	.. 82,192	Assensole	.. 2,950
Mankar	.. 76 84	Sitarampore	.. 2,486
Panaghur	.. 19,941	Burrakur	.. 78,511
Durgapore	.. 8,889		
Ranigunge	.. 2,51,994	Total	.. 4,44,597

Local registration yields the following results:—

	Mds.
Govindpore	.. 88,975
Purulia	.. 10,375
Nadiara	.. 27,796

representing an average annual import of 1,28,528 maunds. Of the quantity registered at Govindpore, 22,116 maunds were destined for Chatra, the remainder being consigned to Rajgunge, Topechansi, Dumri, Bagodar, Atka, Barkata, Burhee, and Chauparan, all marts on the Grand Trunk Road. The chief sources of supply were Ranigunge (30,101), Burrakur (2,886), Burdwan (1,280). The Purulia returns include 6,043 maunds for Purulia, 1,470 for Balarampore, 849 for Sirkabad, 418 for Chyebassa, and smaller amounts for Jhalda, Chandil, and Ranchee. Burrakur supplied 4,924 maunds, Ranegunge 2,539, Bankoora 1,840, and Mejha 875. Out of the quantity registered at Nadiara, 19,910 maunds were for Jhalda, 6,305 for Ranchee, 734 for Toolin, and smaller amounts for Bagmundi and Jaipore in Manbhoom, and Bundu and Tamar in Lohardugga. The supply was drawn from Ranigunge (18,264), Burrakur (2,579), Bankura (2,224), Krishnagore (1,909), Sonamuki (1,848), and Mejha (402).

60. On the face of the returns it is clear, that, for the reasons explained in paragraph 42 above, the salt supply of Singhbhum has escaped registration. If Chyebassa imported so much as 418 maunds by this route, it is morally certain that much more must have been imported. The point, however, is not very material. In order to estimate the demand for salt after the Railway is open, we may assume that the line will supply Manbhoom, Singhbhum, the head-quarters sub-division of Lohardugga, the south-eastern corner of Hazaribagh, and the Tributary States of Bonai, Gangpur, Udaipur, and Jaspur. It will probably supply parts of Sirgoojah and Korea as well, but I have left these out of account as a set-off to possible over-estimates in the area already assumed. Now, the population of the tract I have described, according to the last census, is, as nearly as I can calculate, 8,174,444. Taking the average annual consumption per head at 12 lbs, as given by Sir John Strachey, the total yearly demand will be in round numbers 2,38,000 maunds, the whole of which will have to be carried for varying distances by the new railway.

61. *Spices*.—The net import according to the Railway returns is 17,066 maunds, including 14,040 maunds to Burdwan, 1,545 to Ranigunge, and 1,069 to Burrakur. Local statistics shew a total of 754, or an average annual import of 1,284 maunds. Probably 1,500 maunds may prove a fair estimate.

62. *Sugar*.—A total import of 2,787 maunds appears in the Railway returns, including 1,366 maunds to Ranigunge, 681 to Assensole, and 25 to Burrakur. The local statistics shew 219 maunds—all for Purulia and Chyebassa. Probably 500 maunds would be a fair estimate of the normal demand.

63. *Tamarind*.—The railway returns give a net import of 881 maunds, 241 to Ranigunge and 23 to Burrakur. Tamarind is not shewn in the local statistics, and has probably been included under the head of spices.

64. *Tobacco*.—The total net imports of tobacco according to the railway figures is 87,745 maunds, distributed as follows:—

	Mds.		Mds.
Burdwan	.. 47,482	Assensole	.. 549
Kanoo	.. 11	Sitarampore	.. 436
Mankar	.. 443	Burrakur	.. 15,886
Panaghur	.. 287		
Rajbandh	.. 82		87,475
Durgapore	.. 170		
Ranigunge	.. 22,850		

The registration returns of Manbhoom shew 2,195 maunds (giving a yearly average of 8,756 maunds) chiefly for Purulia and Jhalda. Considering how little tobacco is grown in Chota Nagpore, the annual imports cannot well be less than 30,000 maunds, and we may assume that the railway will carry at least this amount.

65. *Turmeric*.—Net import according to railway figures 9,109 maunds including 5,290 to Ranigunge and 3,065 to Burrakur. Registered locally 1,257 maunds, or a yearly average of 2,148 maunds. These imports went to Purulia, Jhalda, and Ranchee. Probably 5,000 maunds may be taken as the normal average import.

66. *Wines and spirits*.—Net imports by railway 1,802 maunds including 299 to Ranigunge, 810 to Assensole, 13 to Sitarampore, and 20 to Burrakur. Only 24 cases

shewn separately in local returns, the rest being included in the items "Boxes" and "Miscellaneous."

EXPORTS.

67. *Babooi string*.—This string, made from jungle grass, is not separately recorded in the railway returns. The trade is believed to be increasing. Large quantity of *babooi* pass through Purulia from Singhbhum, and the article is in great demand in Bancoora and Burdwan for use in thatching. During the seven months, from June to December 1882, 585 maunds were registered at Nadiara and Purulia. Most of this came from Jhalda, and the Singhbhum exports appear to have escaped registration. I have ascertained by special enquiries that between the 20th November 1882 and the 19th March 1883, 478 maunds of this article passed through Chandil from Singhbhum. Much of the trade is carried on *sagars* or block-wheeled carts, and on pack-bullocks or ponies. It is, therefore, peculiarly difficult to register, as *sagars* can go almost anywhere, and their owners, as a rule, dislike the *serais*. In the district trade reports already referred to, the exports of this article from Manbhum alone were estimated as follows:—

					Mds.
In 1879-80	..	..	..	..	10,000
" 1880-81	..	..	..	..	20,000
" 1881-82	..	..	..	..	40,000

These figures are admittedly conjectural; but having regard to the peculiar conditions under which *babooi* string is exported, and the known defects of our system of registration, I believe the railway may count upon carrying between 10,000 and 20,000 maunds of this string during the year. Of course the estimate is not based upon any statistics, but I have myself seen such large quantities of *babooi* passing along the roads, that I am sure the registration returns gave no idea of the magnitude of the trade.

68. *Coal*.—The Railway returns shew a large export of coal from Burrakur and Sitarampore. Most of this comes from collieries close to Burrakur, and will not affect the new line. Some coal will probably be carried on the section of the line between the Damooda river and Sitarampore, but the statistics available do not enable me to say how much, as there are no separate returns for the collieries lying near this section. In paragraph 8 above, I have made some general remarks on the possible development of the Jheria and Hingir fields. No estimate can be framed of the quantity of coal which those fields might throw upon the Railway. It would probably be very large. In a note upon the prospects of a Railway through Lohardugga and Sirgaojah to the Central Provinces, the Commissioner of Chota Nagpore has laid some stress upon the importance of encouraging the use of coal for cooking purposes by the people of India. Wood fuel is known to be getting dearer almost yearly; the clearing of jungle progresses rapidly, and the operations of the Forest Department, for preventing and remedying the effects of wasteful management, cannot be expected to produce any tangible result for years to come. If the people themselves could be induced so far to modify their habits as to use coal for cooking, not only would the incessant clearing of jungle, with its evil effects on the rainfall and on the moisture of the soil, be put a stop to, but there might be some prospect of the manure, which is now used for fuel, being put upon the land. While in Ranigunge, in January last, I ascertained that coke is very largely used there for domestic purposes. Every man who works in the coal mines gets a basket or two of small coal given him free of charge, and most of the miners are reported to help themselves liberally into the bargain. This coal is made into coke and used for cooking. Again, in the east of Govindpore sub division, there are a number of small coal-pits under native management, which export coke to Hooghly and Howrah, where it is sold by retail for cooking. These, no doubt, are only small beginnings among people who are accustomed to see coal in continual use, who feel the pressure of the high price of wood, and who, as a rule, are not in a position to supply themselves with cow-dung fuel. But the fact that a beginning has been made in a matter where native prejudices are peculiarly strong, seems to point to an almost indefinite expansion of coal traffic, directly railways have opened up fresh supplies of coal and made it worth the while of producers to work for the native retail demand. Even now, I believe, much might be done in the way of popularising the use of coal, if the matter could be brought to the notice of natives in some practical way.

69. *Dye-woods*.—Both Hazaribagh and Lohardugga produce excellent indigenous dyes which are used in the manufacture of carpets carried on in the Hazaribagh Jail. A list of the Lohardugga dyes is given at pages 349-50 of my statistical account of Lohardugga district, forming Volume XVI of Dr. Hunter's Statistical Account of Bengal. The trade may be expected to develop when the railway opened, but no estimate of the probable exports can be framed.

70. *Grain, Rice*.—The railway returns for 1882 shew the following net exports:—

	Mds.		Mds.
Burdwan	.. 5,85,681	Ranigunge	.. 5,91,574
Kanoo	.. 41,496	Assensole	.. 1,651
Maukur	.. 39,879	Sitarampore	.. 9,026
Panaghur	.. 4,572	Burrakur	.. 41,817
Rajbundi	.. 441		
Durgapore	.. 34,007	Total	.. 13,49,791
Ondal	.. 44		

Only 4,098 maunds were registered locally, mostly from Purulia and Jhaldah, shewing a yearly average export of 7,020 maunds. The large rice trade from Singhbhum appears to have escaped registration altogether. I have ascertained that 3,000 maunds passed through Chandil between November 1882 and March 1883, destined for Ranigunge and Burrakur. In the District Trade Report for 1881-82, the export of rice from Manbhoom only was estimated at 20,000 maunds in 1879-80, and 10,000 maunds in 1880-81. In 1881-82 exportation was said to have stopped owing to the reduced demand consequent on good harvests in Bengal Proper, and the local surplus was believed to have been stored awaiting a rise of prices. The district officer on the other hand doubted the existence of any considerable surplus, thinking that most of the rice exported from Manbhoom came really from Singhbhum. The registration returns shew that rice is exported from Manbhoom, but I think they materially understate the quantity. The existence of a large export from Singhbhum is generally admitted. I would estimate the normal exports of both districts at 50,000 maunds, but I anticipate a large increase when the railway is open.

71. *Hides*.—The exports of hides according to the railway statistics, are—

	No.		No.
Burdwan	.. 14,386	Assensole	.. 601
Kanoo	.. 225	Sitarampore	.. 593
Panaghur	.. 191	Burrakur	.. 1,181
Durgapore	.. 16		
Ranigunge	.. 80,555	Total	47,748

The local figures shew 9,980 *hides* (not maunds) registered at Purulia, and 33,289 at Nadiara, being a yearly average of 74,172 hides, or, taking six hides to a maund, of 12,000 maunds. This, however, does not fairly represent the trade of the division. While at Ranigunge in January last, I saw some of the leading hide-merchants there, and their statements, though statistically indefinite, went to shew that a large proportion of the Ranigunge exports is derived from Chota Nagpore. On a comparison of the railway figures with the registration returns, and paying due regard to the general opinion as to the magnitude of the trade, I would estimate the quantity of hides to be carried by the new railway at from 25,000 to 30,000 maunds.

75. *Horns*.—Net exports, according to railway figures, 1,764 maunds—1,386 from Ranigunge, and 320 from Burrakur. None registered locally. The export in 1881-82 was estimated at 1,000 maunds in the District Trade Report.

73. *Hurrah or myrabolams*.—The railway figures shew an export of 7,344 maunds, of which 7,235 are from Ranigunge, the rest being divided between Burdwan, Panaghur, and Mankur. Only 108 maunds, destined for Bankoora, were registered locally. The trade, however, is known to be large. The tree (*terminaha chebula*) which yields myrabolams grows almost exclusively in Chota Nagpore; and it may safely be inferred that the whole of the export shewn in the railway returns came originally from the districts of this division.

74. *Lac, including lac-dye, shellac, stick-lac, and refuse*.—Net exports, according to railway statistics, 1,03,181 maunds, divided among the stations as follows:—

	Mds.
Burdwan	.. .. 141
Mankur	.. .. 985
Panaghur	.. .. 23,033
Ranigunge	.. .. 27,348
Burrakur	.. .. 48,031
Total	.. 99,541

The local registration returns shew—

	Mds.
Govindpore	... 4,088
Purulia	... 7,689
Nadiara	... 24,132
Total	... 35,909 for seven months,

representing an average annual export of 61,548 maunds. There is, however, good reason for believing that the local registration understates the magnitude of the trade. The lac-factories at Nirsha, Chas, and Raghunathpore lie outside the circle commanded by the registering stations, and their exports have not been recorded. Again, very little stick-lac is grown in Burdwan and Bankoora. Shellac, it is true, is manufactured in large quantities, but the raw material is drawn from Chota Nagpore. It may be assumed therefore that the whole of the railway exports—in round numbers 1,00,000 maunds—come in one shape or other from Chota Nagpore, and that this quantity will be carried by the new railway for varying distances.

75. *Lime*.—The exports of lime from Burrakur during 1882 amounted to 2,34,366 maunds, all of which came from places in Govindpore to the west of the Burrakur river. In the villages along the Grand Trunk road, between Nirsha and Chirkoonda, there are

large surface deposits of *ghooting* or nodular limestone, which are worked for lime. It will be seen from the annexed map that Ritter von Schwarz, Superintendent of the Government Experimental Iron Works at Burrakur, has discovered numerous deposits of pure limestone on the south of the Pachete hill. When the railway is open, these quarries will be able to undersell the small Govindpore quarries mentioned above. They will be closer to the rail, and they will send their produce direct to Sitarampore. Assuming the demand to remain the same—and it would probably increase—the railway might count upon carrying, say, 8,00,000 maunds of lime a year from near the Pachete hill to the Sitarampore station. Again, if the Burrakur Iron Works are started on a large scale, I understand they will require 75,000 tons of limestone a year to supply one large and two blast-furnaces, or 120,000 tons for two large and two small furnaces, as has been recommended by Ritter von Schwarz. The whole or a large portion of this would be carried by the railway, though only for a short distance. The railway would also carry all iron manufactured by the Burrakur works which may be sent westward. The demand of the Central Provinces is estimated officially at 15,000 tons a year.

76. *Seeds, including mustard, surguja, and other oilseeds.*—The railway returns shew the following statistics:—

Stations.	Exports.	Imports.
Burdwan	8,176	1,74,472
Kanoo	.....	.....
Mankur	164	26,090
Panaghur	7	6,638
Rajbandh	.....	85
Durgapore	102	2,311
Ranigunge	56,696	58,724
Assensole	.....	1,876
Sitarampore	14	827
Burrakur	.....	5,217
Total	60,159	2,75,685

Local registration gives the following results:—

Govindpore	82,483
Nadiara	80,979
Total	63,492

or a yearly average export of 1,08,792 maunds. Most of the exports registered at Govindpore were from Chatra, Bagodar, Burhi, and other marts in Hazaribagh; their destinations being Ranigunge, Burrakur, and Burdwan. The exports through Nadiara were mostly from Jhalda for Ranigunge, Bankoora and Sonamukhi. It must be admitted that the figures quoted above are rather puzzling. Oilseeds are the chief and most conspicuous export of Chota Nagpore. One sees enormous quantities of them on every road during the cold weather, and as pack-bullocks are largely employed to carry them, it may be assumed that a considerable proportion of the export escapes registration. Taking the registration figures as they stand, without making any allowance for omissions, and merely correcting them so as to represent a full year's export, it will be seen that nearly 50,000 maunds do not reach the East Indian Railway at all. On the other hand the railway figures shew an enormous importation of oilseeds into Burdwan and Bankoora, from which we may infer that these districts grow oilseeds comparatively little and require large quantities of oil. The amount, then, by which the local figures exceed the railway statistics, represents the consumption of the tract of country lying between the registration stations and the East Indian Railway. The cultivation of oilseeds will probably extend itself remarkably when the railway is opened. It is a kind of cultivation which gives little trouble, and which the people understand. No irrigation is needed, and I have seen excellent crops grown between the stumps on land recently cleared from jungle. Within a few years the railway may count upon carrying some 5,00,000 maunds yearly.

77. *Tea.*—The railway figures shew an export of 3,273 maunds, all from Lohardugga and Hazaribagh. In 1880-81 there were thirty-six tea plantations in these two districts. The industry can hardly be described as remarkably flourishing, but it has the great advantage of cheap labour, and is not likely to die out until the local rates of wages and system of hiring labour undergo some more material changes than can be foreseen at present.

78. *Timber.*—The railway returns shew a slight preponderance of imports over exports, and thus throw no light upon the Chota Nagpore trade. The local registration figures give a total of 11,542 sleepers, registered thus:—

At Govindpore	8,106
„ Purulia	547
„ Nadiara	2,889

Besides sleepers, there is also a considerable export of *rollahs* (sāl saplings) to Burdwan and Bankoora, where they are used for house-posts, rafters, &c. The large demand for these

young trees probably does more harm to the forests than that for heavy timber, which can only be cut from mature trees. It would be useless to attempt to speculate upon the timber trade that may be carried by the new line. Sources of supply hitherto untouched will be opened up, but the extent to which these will be drawn upon depends upon factors at present unknown—such as the extension of railways, the system of forest conservancy introduced in zemindari forests, the cost at which iron sleepers can be made, and the like.

79. *Tusser silk cocoons*—Are exported to Bankoora, Burdwan, Beerbhoom, and Azimgarh in the North-West Provinces. The exports for the three years ending 31st March 1882 were estimated as follows in the District Trade Report already referred to:—

1879-80	...	30,000 kahans of 1,280 cocoons each.
1880-81	...	15,000 "
1881-82	...	7,500 "

No reliance, however, can be placed on these figures, nor is there any reason for believing that the exports declined during this period so remarkably as the estimate would shew. Some special registration started by me in Chandil, in November last, as a sort of rough check upon the returns given by the serai farmer in Purulia, shews that 4,077 *kahans* of cocoons passed through the Chandil market between the 20th November 1882 and the 19th March 1883. Cocoons are very light, and take up much space in proportion to their weight, so that the trade would not be very important to the railway.

80. *Summary*.—For the sake of comparison, the estimates of the trade in particular articles, attempted in the foregoing paragraphs, are collected and re-stated below in a tabular form. This mode of statement brings out clearly enough the fragmentary and imperfect character of the estimates. No one who possesses a fair general knowledge of Chota Nagpore, and has watched the trade which passes along the main roads, will accept my estimate of imports as fairly representing the true demand. At the same time it is difficult to see how the quantities can be materially raised without putting the existing data altogether aside and framing an estimate by mere guesswork. No attempt has been made here to anticipate the enormous extension of the import trade which will follow upon the opening of the railway. At present Chota Nagpore is in a primitive stage of economic development. The price of almost all articles, excepting, perhaps, salt, is determined more by custom than by competition, and everywhere the tendency is for a small ring of mahajans to frustrate or minimize the operation of pure economic causes by manipulating this customary price in accordance with their own interests. Within the last two years several public markets have been opened in Manbhoom, and the determined opposition offered to these by small cliques of petty dealers has shewn very clearly how the country stands in need of the wholesome competition which a railway is likely to introduce—

Imports.	Mds.	Exports.	Mds.
Beer	400	Grass and babooi string	20,000
Betel-nuts	8,000	Coal	.....
Blankets	700	Dye-woods	.....
Brass and brassware	2,000	Grain, rice	50,000
Cotton and yarn	12,000	Hides	30,000
Grain, oats	14,000	Horns	1,000
Wheat	10,000	Hurrah or myrabolams	8,000
Other grains and pluses	25,000	Iron	.....
Gunny-bags	2,000	Lac	1,00,000
Jaggree and molasses	15,000	Lime	3,00,000
Miscellaneous, including oil-		Limestone	.....
man's stores, furniture,		Seeds	5,00,000
umbrellas, &c.	10,000	Tea	3,000
Oil	5,000	Timber	10,000
Oil-cake	10,000	Tusser cocoons	.....
Paper	500		
Piece-goods	30,000		
Potatoes	8,000		
Salt	2,38,000		
Spices	1,500		
Sugar	500		
Tamarind	200		
Tobacco	30,000		
Turmeric	5,000		
Wines and spirits	500		
Total	4,28,300	Total	10,22,000

81. It will be seen that, under the head of exports, no attempt has been made to estimate the quantities of coal, dye-woods, iron, limestone, and tusser-cocoons which the railway may be called upon to carry. The possible development of rival coal-fields, the success of the Burrakur Iron Works, the demand which may spring up for indigenous dyes, and the prospects of tusser-silk in the European market—all these are causes too obscure and too complicated for it to be possible to anticipate their results and express them in a statistical form. It can only be said that these factors may have an important influence on the future of the railway, and that some of them stand a fair chance of coming into play on a large scale within the next ten years.

82. *The Midnapore route.*—In conclusion, I would add a few remarks upon the so-called Midnapore route, or, to speak more accurately, upon the proposal to substitute for the route from Chyebassa to Sitarampore, as laid down by last year's survey, a route from Chyebassa to Calcutta through or near the town of Midnapore. The engineering difficulties to be encountered on this route form, I understand, the subject of a special report by Mr. F. J. E. Spring, and need not be further referred to here. The competition of the canal on the sections from Midnapore to Calcutta has often been discussed before, and it has already been shewn that, owing to the additional outlay involved in crossing a country intersected by huge tidal rivers and liable to be flooded on a large scale, the carriage of a ton of wheat from the Central Provinces to Calcutta would be no cheaper by the Midnapore than by the so-called Burrakur route. One point, however,—and that, perhaps, the most important of all—has not yet been prominently brought to notice. Under ordinary conditions, any railway may reckon upon carrying the trade of a strip of a country lying upon either side of the line. How broad the strip may be depends upon circumstances, but it is always a strip. This may be called the normal relation of a railway to the country which it serves, and it is the relation which obtains in the case of the Midnapore route. On the section from Chyebassa to Midnapore the traffic-yielding strip will necessarily be narrow, as it is hemmed in by the hills of the Orissa Tributary States on the one side, and of the Chota Nagpore plateau on the other. The section from Midnapore to Calcutta would command a wide belt of traffic, but here the competition of cheap and easy communication by water has to be considered. On the other hand, the route from Chyebassa to Sitarampore not only has no water communication to fear, but owing to the peculiar conformation of the country both commands the traffic of its own strip and cuts off, so to speak, the traffic of an enormous tract of country to the west, which can only find an outlet by flowing towards the new line. It crosses, as it were, the mouth of an estuary of trade and intercepts its entire contents. This argument, the force of which will be evident from a glance at the annexed trade-map, applies equally to the route through Midnapore itself, and to the alternative scheme suggested by Mr. Wilson, Collector of Midnapore, for taking the line to Geunakbali, at the junction of the Hooghly and Roopnarain, and connecting it by a steam-ferry with the Diamond Harbour line. The latter route may be cheaper than the former, but it has special inconveniences of its own; and if it can be shewn that neither will command such a large body of traffic as the Sitarampore route, both are equally condemned.

No. 240, dated Nagpur, the 11th July 1883.

From—J. B. FULLER, Esq., C.S., Offg. Director of Agriculture, Central Provinces,
To—The Secretary to the Chief Commissioner, Central Provinces.

REFERRING to the Government of India letters marginally noted, I have the honour to submit the following report on the trade and trade resources of Chhattisgarh in connection with the projected lines of railway now under consideration.

No. 327A, dated 9th April 1883.
No. 77, Statistics, dated 4th May 1883.

2. These lines are three in number, running respectively north, east, and south-east. The first will connect Chhattisgarh with the East Indian Railway at Katni, *via* Riwa territory; the second will connect Chhattisgarh with Calcutta, and, together with the present Nagpur and Chhattisgarh State Railway, will form part of a line of through connection between Calcutta and Bombay. The third line runs to the littoral of the Bay of Bengal at Vizagapatam. The prospects of this line have been already dealt with by the Chief Commissioner in a Minute dated 7th April 1883, and the present report is therefore confined to the lines running northward to Katni and eastwards to Calcutta.

3. The country known as Chhattisgarh consists of an undulating plain surrounded by a belt of hills on the west from the boundary of the Bhandara and Balaghat districts, and have been pierced by the only two good trade outlets Chhattisgarh possesses, first by the Great Eastern road to Nagpur, and lately by the Nagpur and Chhattisgarh State Railway, which has now been pushed some 50 miles beyond the hills into the Chhattisgarh plain. On the north the hills form an extensive block of wild and uncultivated country stretching over the whole of the northern portion of the Bilaspur district, as well as the greater portion of the adjacent district of Mandla, and running eastwards in a broad belt along the border of Riwa and Chota Nagpur. The only trade outlets through this line of hills, which in any way deserve mention, are those running from the Bilaspur district over the Borla Pass to Mandla and Jubbulpore, and over the Komo Pass to Sohagpur in Riwa territory. But the trade which the difficulties of these routes admit of is at present unimportant. On the east, Chhattisgarh is bounded by the Eastern Ghats, which form the boundary between the Central Provinces and Orissa and Ganjam. These Ghats are traversed by a road connecting Sambalpur with Calcutta, which was formerly used for the Bombay mails, but is now almost wholly deserted, and most of the traffic which crosses this part of the frontier is carried by the river Mahanadi, which is a trade route of considerable importance. The border country towards the south-east and south is, perhaps, the wildest of any, forming, in places, stretches of uninhabited hill and forest reaching as far south as the Godavari. The only traffic route in this direction is that running towards Vizagapatam *via* the Kulabandi State, along which a moderately large but decreasing traffic is carried by means of pack-bullocks. This route very nearly coincides with one of the lines projected for the railway between Raipur and Vizagapatam.

4. Under these conditions, it is to be expected that the population should be densest and cultivation most continuous in the centre of the plain, and that both should fall off as one left

A



EXPLANATION

POPULATION 200 TO THE SQUARE MILE OR OVER

180
150
100
50
UNDER 50

a
b
c
d
e
f

SCALE 64 MILES = 1 1/4 INCH

the centre for the circumference. This is precisely the case. The thickly populated part of Chhattisgarh forms two blocks separated by a broad belt of jungle. One block constitutes the *khalsa* portion of the Raipur and Bilaspur districts,—the portion, that is to say, held by malguzars direct from Government,—and the other block similarly constitutes the *khalsa* portion of the Sambalpur district. These blocks of *khalsa* territory are bounded and separated from one another by tracts held in so-called *zemindari* right, that is to say, by proprietors intermediate between the malguzars and Government. Beyond the *zemindaris* again are a number of feudatory chiefships which are connected with this administration by political relations. The average density of population in these different regions is clearly shown by

* Marked A.

the following sketch map,* in which *zemindaris* are denoted by dots and chiefships by cross lines. The sub-divisions into which the *khalsa* area is divided are *tehsils*, which are four in number in Raipur, three in Bilaspur, and two in Sambalpur. The general average density of population in the Dhamtari (Raipur) and Bilaspur *tehsils* is lowered by their including a large portion of waste country on their southern and northern borders respectively.

5. The total area of Chhattisgarh is nearly forty thousand square miles, and its population is over 4½ millions. But it is not probable that the projected lines of railway will derive much traffic from any part of Chhattisgarh outside the *khalsa* except from the chiefships of Nandgaon and Khairagarh, which are of exceptional fertility. So far as railway prospects are concerned, attention may therefore be confined to the *khalsa* portion of the Raipur, Bilaspur, and Sambalpur districts, which, although only comprising one quarter of the total area of Chhattisgarh, include nearly half of the number of its inhabitants.

6. The character of the country included in the *khalsa* of these three districts is by no means uniform. The most productive portions are those where the black so-called "cotton" soil of Central India occurs, since here not only rice, but spring crops, such as wheat and linseed, can be profitably grown. Black soil occurs in isolated patches in several parts of Chhattisgarh, but only forms a continuous stretch at the western extremity, where it extends over the eastern portions of the Drug and Simga *tehsils*, the greater part of the Mungeli *tehsil*, as well as over a large portion of the Nandgaon and Khairagarh chiefships. This tract may be certainly pronounced to be by far the most productive portion of Chhattisgarh. West of this belt the country stretches in a series of gentle undulations, the uplands consisting of poor reddish soil only suited for inferior crops, and the low lands of a yellow or reddish clay excellently fitted for the production of rice. Further east the broad strip of jungle is met with, which is the eastern boundary of the Raipur *khalsa*; and beyond it comes the Sambalpur *khalsa* which has for its prevalent soil the yellow clay mentioned above, and is almost wholly devoted to the production of rice.

The extent of cultivation and its distribution amongst the more important crops in the *khalsa* of each of the three districts is shewn in tabular form below:—

DISTRICT.	Total area.	Area cultivable, but not cultivated.	AREA CULTIVATED.		PERCENTAGE OF CULTIVATED AREA TO TOTAL AREA.	
			At present.	At settlement (1868-69).	At present.	At settlement (1868-69).
	Acres.	Acres.	Acres.	Acres.		
Raipur	32,60,878	10,66,422	10,28,361	16,23,518	69	49
Bilaspur	10,28,280	7,04,265	10,84,216	9,59,481	56	49
Sambalpur	5,03,993	1,27,775	4,36,218	.....	77	.....

DISTRICTS.	CROPPED AREA (EXCLUDING CULTIVATED AREA BY THE EXTENT OF LAND BEARING TWO CROPS WITHIN THE YEAR).							Percentage of area under rice to total cropped area.
	Under wheat.	Under rice.	Under other grains.	Under oilseeds.	Under cotton.	Under other crops.	Total.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
Raipur	1,81,214	11,74,770	5,32,552	2,35,069	15,514	9,856	21,34,979	54
Bilaspur	51,099	7,75,480	2,60,324	85,604	18,355	22,069	12,12,850	63
Sambalpur	.....	3,63,560	35,839	10,591	17,233	.....	4,36,218	81

None of these figures are entitled to strict credit. Those for Raipur and Bilaspur have been compiled from the village returns for 1882-83, and though very far from accurate, may be taken as approximately true. The village area of Sambalpur has never been mapped or measured, and the figures given for this district are merely estimates.

7. The average size of a single holding in the Raipur and Bilaspur districts is not less than 20 acres, that is to say, more than double the average size of a holding in the Bundelkhand districts of the North-Western Provinces, in which, as in Chhattisgarh, irrigation is but seldom practised, and which therefore offer a fair standard of comparison. The rainfall has an average of about 40 inches, and the hills which encircle the districts generally ensure an adequate or nearly adequate supply. The soil is, as a rule, fertile, and in places is of more than average fertility. These causes have contributed to give Chhattisgarh the reputation of enjoying the largest surplus produce of any part of the Provinces.

In 1868 the officer who had just completed the settlement of the Bilaspur district (Mr. Chisholm) wrote :—

"The adventurous carrier class (Banjaras) following their strings of bullocks through the hilly wilds which shut in the Chhattisgarh plain, in order that they may return laden with grain, have not inaptly termed the country "Khalauti" (the land of threshing-floors). They find here a surplus produce, which, from the absence of facilities for export, seems inexhaustible, for in a great number of villages they cannot fail to observe the prominent and capacious grain stores well raised above the ground, walled, and thatched, and containing from 50 to 200 cartloads of the great staple—rice. Wheat, oilseeds, and pulses are produced in great abundance, and there is a kind of reckless improvidence in many places in feeding, free of cost, all travellers who pass, that indicates a condition in which it may be said that want is almost unknown."

A rough idea of the extent of the annual surplus in the khalsa alone may be gathered from the following calculations. The average outturn per acre for wheat, rice, other miscellaneous grains and oilseeds was estimated by the Settlement Officer of Bilaspur as 7, 6, 6, and 7 maunds respectively and by the Settlement Officer of Raipur as 7, 10, 6, and 3* maunds. It would be safe to assume 7, 8, 6, and 6 maunds as the rates of produce in ordinary years. In estimating the amount locally consumed, wheat must be altogether omitted, for little or none of it is eaten in Chhattisgarh, and it is grown almost wholly for export. Of rice $4\frac{1}{2}$ maunds and of other grains, principally small millets, 2 maunds, would be an ample allowance per head of population, since this gives a daily ration of $\frac{1}{2}$ seer (or $1\frac{1}{2}$ lbs.) to each person of whatever age, and it should include a margin for wastage. For the consumption of oil, half a maund per annum per house is a liberal estimate; this is equal to $1\frac{1}{2}$ maunds oilseed. Making a further deduction for seed, the resulting surplus is as below :—

		Total produce.	Amount consumed locally.	Amount used for seed.	Annual surplus.
Wheat	...	16,26,121	.....	2,32,303	13,93,818
Rice	...	1,56,02,072	89,68,084	29,25,378	37,08,610
Other grain	...	48,15,036	37,76,036	3,96,253	6,42,747
Oil-seeds	...	19,20,978	8,67,287	32,016	10,21,675

In considering these figures, it should be borne in mind, *firstly* that they only relate to the khalsa portion of the Raipur and Bilaspur districts, and that the surplus produce of zemindaris and chiefships is not included. This surplus is very large indeed in the case of the Nandgaon and Khairagarh chiefships, where wheat is extensively grown for export. *Secondly*, the surplus is rendered smaller than it should be by the inaccuracy of the statistics of area, which err very largely on the side of understating the extent of cultivation. Thus the area under wheat in Bilaspur is represented to have not increased since settlement, whereas it is a well-known fact that there has been a very considerable increase : On the subject of these statistics the Commissioner writes :—

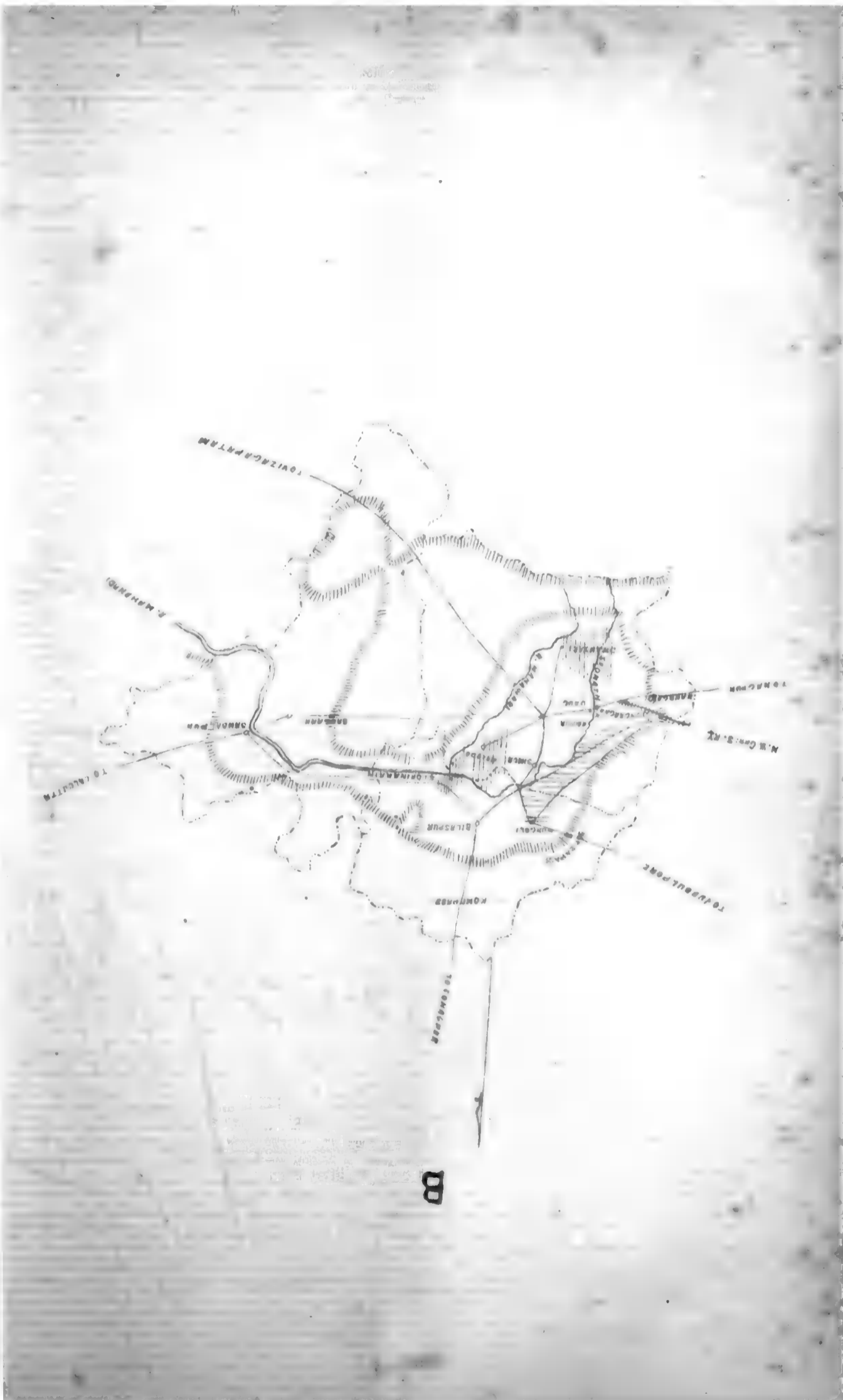
"From my own experience I can answer for the statistics of new cultivation since settlement being incorrect. For instance, in the low country I found, two years ago, that the village papers shewed little or no increase of cultivation, but when I went over the ground with the village books in my hand, I found that in many instances there was no cultivable land left uncultivated. Another proof of increase in cultivation is the fact that all wild animals, such as buffaloes and bison, have been driven from east of the Mahanadi. Ten years ago buffaloes swarmed in the Lon country (east of Baloda) : now they are almost unknown west of the river."

8. Of the present trade of Chhattisgarh, there is very little definite information.

* Marked B.

The principal existing marts and trade routes are shewn in the following sketch-map.* The khalsa of Raipur and Bilaspur varies very greatly in fertility, and is very far from yielding a surplus produce over the whole of its area. The position of the most fertile tracts is indicated by shading on the map. For the wheat-producing tract on the west, Mungeli, Dongargarh, and Nandgaon are the principal marts. For the rice-growing tract on the south, Dhamtari and a number of smaller marts ; while Baloda is the collecting centre for the rice-country towards the north-east (containing the fertile tract of Lon), and is, perhaps, the most thriving market in the two districts. The trade which Raipur town itself transacts is very considerable, but is drawn from the country north-east and south of it, and not from the tract in its immediate vicinity.

* This estimate is believed to be for linseed grown as a second crop after rice. The Bilaspur figure represents the outturn gathered when linseed was the only crop sown in the year.



9. Until the opening of the Nagpur and Chhattisgarh State Railway, the road between Raipur and Nagpur was the main traffic outlet of the Chhattisgarh plain. Trade on this road was registered during the years 1871—1877, with the following results :—

YEAR.	TO CHHATTISGARH.		FROM CHHATTISGARH.				
	Salt.	Total all commodities.	Wheat.	Rice.	Other grain.	Oil seeds.	Total all commodities.
1871-72	1,47,428	1,64,428	2,82,748	3,45,791	85,185	53,279	8,00,339
1872-73	2,21,698	2,26,659	3,66,198	4,01,759	1,34,553	25,653	10,25,003
1873-74	1,21,702	1,33,023	2,92,439	3,79,203	1,71,192	1,61,479	10,42,048
1874-75	1,37,542	1,67,305	2,29,059	2,66,025	2,68,671	1,95,126	10,32,510
1875-76	84,320	1,04,300	2,50,502	2,41,472	69,496	5,70,662	11,67,901
1876-77	.....	1,07,752	.....	.....	.....	.....	12,48,429

The very considerable stream of traffic along this road was one of the principal reasons for the construction of the Nagpur and Chhattisgarh Railway, which runs almost parallel to, but at some distance from, it. The railway first commenced to carry Chhattisgarh traffic when opened to the Amgaon station on the western side of the line of hills bounding the Raipur plain. This took place in November 1881, and in December 1882 the line was carried through the hills to Nandgaon, 50 miles on their eastern side. An indication of the effect which the railway has had on the traffic running parallel to it by road is given by the receipts at a toll-bar situated on the Raipur-Nagpur road, almost exactly midway between these places, which are compared below with the exports from the Nandgaon and Dongargarh stations (within the Chhattisgarh plain) and the Amgaon station (immediately outside it) up to the end of June 1883 :—

				EXPORTS FROM—			Total receipts on the Nagpur road
				Amgaon.	Dongargarh.	Nandgaon.	
				Mds.	Mds.	Mds.	Rs.
1881	Half-year ending June 30th	...	.....	.....	.....	.....	10,476
	Ditto December 31st	...	1,976	.....	.....	.....	2,068
1882	Half-year ending June 30th	...	34,949	.....	.....	.....	9,547
	Ditto December 31st	...	3,590	10,851	4,724	.....	1,056
1883	Half-year ending June 30th	...	*	7,54,655	14,92,653	.....	2,486

The opening of the line to Amgaon had but little effect on the road traffic, but its extension to Nandgaon has decreased it by three-fourths. The exports from the Dongargarh and Nandgaon stations during the seven months since they were opened (from 4th December 1882 to 30th June 1883), have been great beyond all expectation, and would have been greater had the railway been able to carry more. They are shewn below—

			From Dongargarh	From Nandgaon..
			Mds.	Mds.
Rice	...	...	2,07,467	5,83,799
Wheat	...	...	3,64,950	5,14,417
Linseed	...	...	1,73,043	3,96,962
Total all commodities			7,69,586	15,21,518

Estimating the road traffic of the half-year at $\frac{1}{4}$ of its amount in 1876-77 (when the toll receipts amounted to four times their figure for the past half-year), the opening of the railway is shewn to have increased export by 128 per cent.

10. The remaining trade routes are of very minor importance. The Bilaspur district is connected with Jubbulpore to the north-west and with Sohagpur to the north by two roads which are only practicable for pack-bullocks—one running *via* the Borla, and the other

* Complete figures are obtainable for Amgaon for this half year, but the exports for the first quarter only amounted to 900 mounds.

vid the Komo pass. The traffic carried by both these routes was registered during the years 1871-1877, and the results are abstracted below—

	Imports into Bilaspur.		Exports from Bilaspur.				
	Salt.	Total all commodities.	Wheat.	Rice.	Other grains.	Oilseeds.	Total all commodities.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
1871-72	1,266	10,480	11,890	79,281	985	.....	1,10,738
1872-73	5,824	19,193	4,154	98,231	2,560	2	1,54,128
1873-74	8,165	18,737	1,81,136	1,27,205	5,253	297	3,47,152
1874-75	2,707	10,463	83,635	1,37,985	11,391	1,095	2,79,284
1875-76	339	12,071	21,105	20,561	10,837	5,617	77,311

In comparison with the large annual surplus available for export the traffic is insignificant, but considering the difficulties of the road and the cost of transport it is rather a matter for surprise that there should be any traffic at all than that the traffic should be a small one. It has been calculated that there must be a difference in price between Bilaspur and Jubbulpur amounting to 200 per cent. before it can pay to carry a consignment of wheat from one place to the other.

No statistics whatever are available of the traffic of the Mahanadi, which is known to be not inconsiderable. It is fed partly from Seorinarain in the Bilaspur district, partly from the town of Sambalpur, and partly from the towns of Binka and Patna at the south-east corner of the Sambalpur district.

The exports principally consist of rice, in return for which large quantities of cocoanuts and some salt are brought up-stream to Binka, whence they are distributed by cart.

The remaining traffic route is that running towards the Madras coast from the south-east corner of the Raipur district, and the trade along this line has been already discussed in the Chief Commissioner's Minute on the projected railway between Raipur and Vizagapatam. It is not of any great present importance. The mainstay of the trade was the import of salt for consumption of the eastern portion of the Raipur and Bilaspur districts. This import is now giving way before the Bombay salt, which is thrown into Chhattisgarh by the railway from Nagpur. The eastern portion of the Bilaspur district has always hitherto consumed Madras salt, but during the last year Madras salt was altogether supplanted by the Bombay article.

11. So far then as existing traffic is concerned, railway lines running either north or east from Chhattisgarh will not have much to commence upon. But the insignificance of the trade at present is entirely due to difficulty of communication, and there is little doubt that a large export would be at once created by the removal of this difficulty. In this export trade wheat, rice, and oilseeds would form the staple commodities, but a considerable accession of traffic may be expected from forest produce, especially lac, which is at present exported to Mirzapur in large quantities. The return traffic is likely to be a light one for some years, since the population of Chhattisgarh is almost entirely rural, and will take time to become large consumers of foreign manufactures. They will require an annual supply of at least 4,50,000 maunds of salt, and their annual consumption of European cotton-goods and metals may be safely estimated at 1,20,000 maunds and 80,000 maunds respectively.

12. There are two sides from which the resources of Chhattisgarh deserve special consideration—one is in relation to its future position as a wheat-exporter, and the other is in relation to famine supply. For the production of wheat on a large scale, Chhattisgarh enjoys many striking advantages. The climate is suitable, and there is abundance of the black soil which produces the wheat of the Nerbudda valley, on which wheat can be grown year after year without either manure or irrigation. In order to ascertain the extent of this soil in the Raipur and Bilaspur districts, an elaborate investigation has been made, based on an examination of the settlement records of each village in the two districts. The general result of this enquiry is shewn below :—

DISTRICTS.	Area of black soil suitable for wheat.			
	Sown with wheat at present.	Sown with other crops (principally rice) at present.	Uncultivated at present.	Total.
	Acres.	Acres.	Acres.	Acres.
Bilaspur ...	51,089	8,13,418	2,17,194	5,81,696
Raipur ...	1,81,214	1,24,641	1,20,281	4,26,136

Were the production of wheat encouraged by increased facility of export there is little or no doubt that the area under it would be enormously increased, not only by the breaking

C



EXPLANATION

TRACTS IN WHICH THE MAJORITY OF VILLAGES HAVE 80 PER CENT BLACK SOIL OR OVER

60

40

20

UNDER 20 PER CENT BLACK SOIL

up of new land, but also by its appropriating the area of black soil on which rice is now grown, but which is, if anything, not so well suited to the production of rice as the yellow and red clays which abound to the centre and east of the districts. Where the cultivation of wheat extended to the full area of black soil available, and the whole of the produce exported, there would be, making a deduction for seed, an annual export of nearly 60 lakhs maunds or one million quarters. It may be held desirable to consult the interests of the wheat trade in aligning the railway: with a view to this a sketch-map* is appended, which shews the distribution of

* Marked C.

black soil in the Raipur and Bilaspur khalsa, based on calculations made village by village. It will be seen that the area of black soil is most continuous on the west of the Sheonath river. The percentage of black soil to the total area in each of the seven tehsils of the Bilaspur and Raipur districts is as follows:—

Western Tehsils.			Eastern Tehsils.		
Bilaspur	..	19	Seorinarain	..	14
Mungeli	..	43	Simga	..	18
Drug	..	17	Raipur	..	7
Dhamtari			..	10	

A line leaving the Nagpur and Chhattisgarh State Railway at Dongargarh, and running round south of Mungeli to Seorinarain, would therefore be the one most suited to the requirements of the wheat export traffic. It may be noted that such a line would avoid crossing either the Sheonath or Mahanadi. The connection of Raipur with Nandgaon would in this case be left to an extension of the Vizagapatam line.

18. So far as famines are concerned, Chhattisgarh can afford to contemplate railway extension from the exporting side. The advantages which it enjoys in comparative certainty of rainfall have been already touched upon; and although, in the present paucity of communications, the occurrence of a famine in Chhattisgarh would be a terrible disaster, it is fortunately a contingency which does not require very serious consideration. But these reasons from another point of view are the strongest which could possibly be urged in favour of opening up by railways a tract which may be regarded as one of the granaries of India. The large exports of grain which poured from these provinces during the period of the Madras famine were largely drawn from Chhattisgarh at a time when the only means of communication between Raipur and Nagpur was a road involving a journey of at least 10 days either way. The enormous exports from the Nandgaon and Dongargarh stations during the last six months are an indication of the extent to which export of grain in famine times could be increased were roads supplanted by railways. The Government of India make special reference in their enquiries to the possibility of Chhattisgarh providing fodder for a large number of Northern Indian cattle in the event of a famine. Good cattle fodder is as scarce in Chhattisgarh as in most other rice districts, and the miserable condition of the village cattle in Raipur and Bilaspur testifies to the innutritiousness of rice straw as a diet. Under present circumstances, therefore, the capabilities of Chhattisgarh in the direction of fodder-supply would be limited to the grass in which its jungles abound, and which annually makes the hills and forests round its borders a favourite hot-weather pasture-ground for thousands of cattle.

Memorandum by the Chief Commissioner, Central Provinces, dated 1st August 1883.

The Government of India have asked for—

No. 337A. of 9th April 1883.

- (1) The area of land in each pergunnah of each district now under wheat;
- (2) The area suitable for wheat;
- (3) Similar information regarding oilseeds and other produce likely to seek the railway for transport to Bombay or Calcutta;

No. 77 of 4th May.

- (4) Information as to the protective character of the Nagpur-Bengal, Bilaspur-Katni,

Raipur-Vizagapatam lines of railway;

- (5). Information as to the probable remunerativeness of the same lines.

Regarding the Bilaspur-Katni line, it is particularly enquired whether the Bilaspur terminus would always have a surplus of grain crops to draw upon, and whether fodder could, in case of necessity, be exported thence to the North-Western Provinces.

2. In order that reply may be given to the foregoing questions, it is necessary to examine—

- (1) The capacity of the Chhattisgarh tract to produce surplus produce for export;
- (2) Its capacity to absorb imports.

The enquiry is to a certain extent simplified by the circumstance that the trade of the Chhattisgarh tract is not mixed up with that of the outside world. Nothing comes into it from the outside to be re-exported. It forms an *enclave* or rather two *enclaves*, the larger including the districts of Raipur and Bilaspur, the smaller that of Sambalpur, and it is perfectly detached from the trade of the provinces round it. It exports its own produce and nothing else; it imports for its own consumption and no more; and this detached condition will probably be maintained in the future. Lines of railway may carry traffic from Calcutta to Bombay and from Vizagapatam to the north, but as far as Chhattisgarh

trade is concerned they might as well be made in the air. Their construction will not complicate the trade of Ohhattigarh in the least.

3. The Director of Agriculture has described the physical characteristics of the tract in the letter which accompanies this report. The following table gives statistics, so far as they are known, of area and population. The latter are, of course, based on the recent census; the former on village papers for khalsa and zemindari lands. In the case of feudatories, they are mere rough estimates. Much doubt has of late been thrown on the accuracy of village papers, but the results here and further on in this Memorandum have shewn at all events the appearance (with some few exceptions) of being roughly accurate. But it is probable, if not certain, that they err by under-estimating the cultivated area.

The proportion of land shewn as unculturable in Raipur and Bilaspur is extremely small, and we may conjecture therefore that the column "Culturable" contains a good deal of very inferior land. In Sambalpur this must be especially the case.

DISTRICTS.	Khalsa zemindari or feudatory.	Cultivated area.	Culturable.	Others.	Total.	Population.	Of which aboriginal.	
Raipur	Khalsa ...	1,028,361	1,000,422	208,095	3,200,878	1,141,883	105,720	(b) Taken from Mr. Hewitt's memo of this said to be of exceptionally good quality and cleared.
	Zemindari ...	1,028,618	(b) 1,217,225	.....	3,407,702	263,280	.....
	Feudatory ...	374,330	.....	.....	1,701,120	427,000	100,517
	Total ...	2,381,144	.....	.....	1,832,237	273,040	.....
Bilaspur	Khalsa ...	1,081,216	704,295	139,710	1,928,230	746,130	187,647	* This figure is taken from Deputy Commissioner's letter, but it differs widely from the figures given by Settlement Officer in Appendix I of Settlement Report.
	Zemindari ...	806,309	.....	.....	2,047,100	271,197	.....
	Feudatory ...	200,276	.....	.....	641,187	100,181	26,156
	Total ...	2,087,801	.....	.....	1,120,508	183,703	.....
Sambalpur	Khalsa ...	430,218	127,775	Nil.	503,093	302,058	40,852	(a) Estimated by the Settlement Officer of Sambalpur.
	Zemindari ...	(a) 320,222	.....	.....	1,800,246	331,441	.....
	Feudatory ...	(a) 1,055,540	.....	.....	7,314,080	980,461	47,207
	Total ...	.....	.....	.....	.....	1,053,000	93,040

N. B.—When figures are bracketed on the left, the figure above represents facts as now existing; that below, facts at time of settlement.

The progress made in cultivation since settlement is less, especially in Bilaspur, than might have been expected: it has probably been somewhat understated. On the other hand, if it has been understated, then the amount of waste land which we have to count on in the future as likely to come under cultivation has been *pro tanto* increased.

4. Coming now closer to the matter in hand, viz. the production of Ohhattigarh, the following table shews the distribution of the crop area in khalsa tracts.

DISTRICTS.	Cultivated area.	Crop area, i.e., area in column 2 plus part in which another crop is taken with rice.	AREA UNDER—						REMARKS.
			Wheat.	Rice.	Other grains.	Oilseeds.	Cotton.	Other crops.	
Raipur	1,028,361	2,164,070	161,214	1,174,770	588,582	2,35,009	15,618	9,556	In this line of figures some double-cropped land is counted twice; whereas in the figures for the year of settlement the cultivated area only is given.
Bilaspur	1,081,216	1,212,000	161,258	929,480	250,084	85,004	18,365	22,009	
Sambalpur	430,218	430,218	51,040	775,489	151,691	39,512	43,433	16,021	

N. B.—When lines of figures are bracketed, that above represents existing facts; that below facts as at time of settlement.

From this table it will appear that Ohhattigarh is pre-eminently and emphatically a food-producing tract,—its non-food crops are quite insignificant in extent,—and that its great staple product is rice; that after rice comes "other grain," i.e., chiefly kodu and kutki; after which come wheat and oilseeds. Looking at the districts separately, we find a fair amount of wheat and oilseeds in Raipur, a very small amount in Bilaspur, and scarcely any of either in Sambalpur, which practically produces rice only.

5. Before going further and enquiring what the produce of the areas just given is, it will be convenient to refer to the case of Sambalpur, and to explain why it is that this district will play but a small part in our calculations. It has then to be stated that the Sambalpur district has at present, roughly speaking, no export trade to the west or north, and that what little import there is takes the line of the Mahanadi. Returns, it is true, shew a not inconsiderable export of grains by the river, but this all comes from the south-east corner of the Bilaspur district. And the Deputy Commissioner shews that, when the line to Calcutta is open, things will not, for some time at least, be greatly changed, for the Mahanadi being fordable only during two months of the year, and being even then impracticable for carts owing to its rocky channel, merchandise from the tract south of the river is, the cost and difficulty of ferrying it over being considerable, almost compelled to take the river line; and that it is all the more certain that it will do so because the affluents of the Mahanadi which traverse this tract are more or less navigable and afford an easy means of bringing

produce from the interior. Such produce arriving in boats would almost certainly be conveyed to the coast in the same way; and imports into this southern tract would, to a great extent, the Deputy Commissioner thinks, take this route. But imports, the population of the tract being so largely composed of wild tribes, would never be considerable. It is assumed then that, for a long time at all events, the part of Sambalpur which lies south of the river would contribute but little to railway receipts. The northern tract would draw all its imports by rail and might export something, but in the absence of better statistics than those of the summary settlement, it is impossible to say what amount, if any, of surplus rice would be available. The amount would certainly be small. Wheat is not grown at all in Sambalpur.

6. It follows from the preceding paragraph that we shall not go far wrong if we confine attention to the Raipur and Bilaspur districts. In the 7th paragraph of his letter, Mr. Fuller gives what he takes to be the surplus produce of the khalsa of these two districts.

As everything depends on this estimate, I give all the calculations in detail in the following table:—

		Acreage.	Outturn per acre. maunds.	Gross produce.	CONSUMPTION.		SEED.		Surplus remaining.
					Per head.	Total.	Per acre.	Total.	
<i>Raipur.</i>									
Wheat	...	181,214	7	1,268,498	...	...	1	181,214	1,087,284
Rice	...	1,174,770	8	9,398,160	4½	5,423,930	1½	1,762,155	2,212,066
Other grains	...	588,552	6	3,231,312	2	2,283,764	½	289,276	678,272
Oilseeds	...	235,069	6	1,410,414	1½	652,709	4 seers	23,507	634,198
Total	...	2,129,605		15,804,384		8,260,412		2,236,152	4,811,820
<i>Bilaspur.</i>									
Wheat	...	51,089	7	357,623	...	...	1	51,089	306,534
Rice	...	775,489	8	6,203,912	4½	3,544,117	1½	1,163,233	1,496,662
Other grains	...	259,954	6	1,559,724	2	1,492,260	½	129,977	429,747
Oilseeds	...	85,094	6	510,564	1½	314,578	4 seers	8,509	187,477
Total	...	1,171,626		8,631,823		5,350,955		1,352,808	1,928,060

* In the case of oilseeds consumption per house is taken. The number of people and houses in the two districts is—

	Population.	Houses.
Raipur	1,141,889	268,473
Bilaspur	746,130	209,719

The Deputy Commissioner, Raipur, calculating for all food-grains and assuming—

	Mds.	Srs.
Average outturn per acre	...	8
Consumption per head	...	6
Seed per acre	...	1

estimates the available surplus of his district as follows:—

	Mds.
All food-grains	66,80,876
Oilseeds	3,47,406
Other produce*	21,850
	70,00,132 maunds,
	or, say, 259,263 tons.

The Deputy Commissioner, Bilaspur, assuming the following factors:—

	Outturn per acre.	Consumption per head.	Seed per acre.
	Mds.	Mds.	
Rice	6	4½	1
Wheat	5	1½	1
makes the surplus for export—			
		Mds.	
Rice	...	5,19,320	
Wheat and other grains	...	3,85,784	
		9,05,104 maunds.	
		or, say, 33,522 tons.	

* Hides, honey, lac, &c.

Hence we have the following estimates independently made:—

		Surplus for export according to	
		Deputy Commissioner.	Director of Agriculture.
		Mds.	Mds.
Raipur	...	70,00,132	47,81,820
Bilaspur	...	9,05,104	19,28,060
Total	...	79,05,236	67,09,880

These estimates are not strictly comparable because, while that by the Deputy Commissioner, Raipur, includes all export, that by the Deputy Commissioner, Bilaspur, includes food-grains only, and Mr. Fuller includes food-grains plus oilseeds, but for all practical purposes they may be accepted as for purposes of comparison; and the conclusion to which I am led is that, while the Deputy Commissioner, Raipur, has erred on the side of excess, and the Deputy Commissioner, Bilaspur, in the opposite direction, Mr. Fuller's estimate is a fair approximation to fact.

7. The Settlement Report of the Bilaspur district supplies a means by which the figures for Bilaspur may be tested. Thus, Mr. Chisholm gives (paragraphs 142 and 180 of report):

		Total produce.	Available for export.
		Mds.	Mds.
Khalsa	...	52,72,657	...
Zemindari	...	24,48,823	...
Total	...	77,21,480	14,04,000

so that the amount available for export from the khalsa portion of the district would be about $\frac{1}{3}$ rd of the total, or, say, 10,00,000 maunds. But since settlement cultivation has increased say, $\frac{1}{4}$ th according to the returns, and as these are believed to be under the mark, and as it is probable that cultivation has increased more rapidly than population, and, therefore, than consumption, we may, I think, add at least $\frac{1}{4}$ th, if not $\frac{3}{4}$ ths to Mr. Chisholm's estimate, thus bringing the present khalsa surplus to 12,50,000, or perhaps 14,00,000 maunds.

The reason why Mr. Fuller's estimate exceeds Mr. Chisholm's is that he takes the outturn per acre for rice at 8 maunds,* while Mr Chisholm took it at 6 maunds. My idea is that Mr. Chisholm's estimate is nearer the mark. If the surplus production of rice in a single year is 14,96,562 maunds from the khalsa of Bilaspur alone, it seems strange that the people should have gone on cultivating rice to so large an extent; that

the price of rice should have ruled even as high as it has; that more rice should not have in the years before the railway forced its way to †Jubbulpur and Nagpur; and that now that the railway has touched Chhattisgarh, though not the true rice tract, more rice should not have been offered for export (vide table in paragraph 9 of Mr. Fuller's letter).

If Mr. Fuller's estimates are wrong, it is in respect to rice, and I should be disposed to reduce the outturn per acre to 7 maunds (if not to 6 maunds), and so to reduce the surplus by 19,50,259 maunds,‡ making the total available surplus 47,89,621 or 176,282 tons.

8. Such being the present exporting capacity of the khalsa produce of the two districts, we have to add a large amount for the surplus of the zemindaris and feudatories. Nothing more than a guess can be offered; the cultivated area being (vide table in paragraph 3)—

		Khalsa.	Zemindaris and Feudatories.
		Mds.	Mds.
Raipur	..	19,28,361	10,30,330
Bilaspur	..	10,84,216	4,37,569*
Total	..	30,12,577	14,67,899

The surplus from the zemindaris and feudatories should be about half that of the khalsa, but I should not be disposed to take it at more than $\frac{1}{4}$ th, because, with some considerable exceptions, cultivation in the zemindaris and feudatories is poorer than in the khalsa lands. A large proportion of their inhabitants consists of aboriginal tribes, and grains of inferior class, and not suitable for export, are largely cultivated there. Taking the proportion at $\frac{1}{4}$ th, we have—

	Tons.
Khalsa export	.. 176,282
$\frac{1}{4}$ th for zemindaris and feudatories	.. 44,070
	220,352

No attempt can be made to shew the proportions in which the various grains will contribute to this export; but the following figures relating to zemindaries, taken from the

* I take the area of the zemindaris in Bilaspur as at settlement, since the figures for area now under cultivation are obviously wrong.

Settlement Report of Raipur, shew that very little wheat and no very large amount of rice is to be expected from the zemindaries—

Cultivated area	..	Acres.	237,144
Of which under wheat	..	..	16,922
Ditto rice	..	..	82,677

9. The *present* exporting capacity of the two district zemindaris and feudatories included having been estimated, it remains to enquire what additional export may be expected as cultivation, under the influence of high prices, advances.

As to Raipur, Mr. Hewitt states that at settlement there were 1,217,233 acres culturable land, of which $\frac{1}{3}$ rd was of exceptionally good quality and cleared. This area has now been reduced to 1,066,422 acres, and we may assume a large part of the specially good land has been occupied. The area remaining is about half the cultivated area. The culturable area in the zemindaris and feudatories is not given.

Bilaspur—The culturable area of the zemindaris at settlement is given at 733,014 acres: that of the feudatories is not given.

Considering the small amount of land shewn as unculturable (column 5 of table in paragraph 8), I cannot, as already remarked, but conclude that, under "culturable," much land of very inferior quality was shewn; but making all allowances, we may, I think, assume that the 220,000 tons of present export may, as Mr. Hewitt has predicted, rise to 300,000 under the stimulus of railways.

10. In trying to estimate the effect of this available surplus on railways, the most important point for consideration is, is the quality of Chhattisgarh rice such as to secure it a favourable reception in the markets of India? Wheat and oilseeds are most important articles of export, but as Chhattisgarh is, as I have said, emphatically a rice-producing tract, the most important point for us to know is, will all its surplus rice be exported? On the west, until the Nagpur district is reached, the rice of Raipur and Bilaspur has to pass through a rice-producing country: on the east the same remark holds good. How far then can it be carried at a profit?

The question I have put will not appear quite uncalled for to any one who remembers that, in the case of articles like food-grains, the demand for which, while it is imperative up to a certain point, ranges between very narrow limits, a small excess or defect in supply creates enormous differences in price. A deficiency of $\frac{1}{10}$ th in the food-supply of a population will run the price of the whole up to famine point, and a small excess over possible consumption will depreciate prices proportionately. Prices in Chhattisgarh have been abnormally low, owing to the constant presence of such an excess, and they will rise most rapidly, and quite apart from the effect of prices in other markets on them, when the surplus begins to diminish. I can scarcely doubt that nearly all the surplus rice, as estimated above, will bear exportation; but much depends on its quality, and on this point fuller enquiry will be made. It is, as I have said, remarkable that so little was offered for export during the last season.

11. I now come to the subsidiary point, whether wheat cultivation will extend, and whether it will extend at the expense of other crops. I do not quite understand why this question should have been deemed of special importance. The wheat trade with Europe has of late assumed large proportions, but rice is as profitable to railway to carry as wheat, and is, if anything, in more general demand; and it would certainly seem that the idea of asking cultivators to exchange a crop which they grow at advantage for one which they will grow at less advantage is a mistake. In fact, to suggest this change is to suggest that all surplus rice will not be exported, and therefore that what ought to be the sheet anchor of the railway will fail, and that the most direct benefits of the railway will be confined to a fraction of the agricultural population, viz. those growing wheat and oilseeds.

12. But taking the question as it stands, I note that Sambalpur grows no wheat at all;

A little is, it is believed, grown in Kalahandi. that the area under wheat in Bilaspur is very small, and shews no tendency to increase; and that the area in Raipur, though considerable, is as nothing compared with that under rice, and has increased in a proportion but slightly more rapid. I have no doubt whatever that the new demand for wheat will produce its effect and very quickly, and I, of course, appreciate the importance of variety of crop; but I do not quite see how the change will affect the total amount of export, the thing with which we are now concerned. One advantage, it is true, wheat has over rice, viz. that it will for the most part be carried right to Calcutta or Bombay; while rice may stop short at Nagpur or some point short of Calcutta on the other side. This is undoubtedly an important consideration in estimating railway receipts.

13. It has been usually assumed that wheat is grown only in land classed as kanhar, but it appears that it is sometimes sown in 'dorsa' as well as in kanhar. The figures are—

		KANHAR.		DORSA.	
		Cultivated.	Culturable.	Cultivated.	Culturable.
		Acres.	Acres.	Acres.	Acres.
Raipur	...	305,854	120,281	728,813	523,099
Bilaspur	...	364,502	217,194	Not given.	
		670,356	337,475	.....	.....

Taking the entire culturable area of the two districts at 4½ million acres, 1 million acres are capable of wheat, but in only 230,000 acres it is at present cultivated. If the zemindaris and feudatories are included, a very considerable addition has to be made to these figures. It is noticeable that Bilaspur with a larger khar area than Raipur grows far less wheat.

14. The following table of prices will prove the point urged above that there is no apparent reason why rice should not be exported as freely as wheat. The former grain, as might have been expected, seems to have the advantage in difference of price in the beginning of the cold weather, the latter in the beginning of the hot weather; and, clearly, if rice is not to be freely exported from Chhattisgarh, we shall, besides losing the financial sheet anchor of the railway, find export limited to a few months of the year after the ripening of the spring crop. I should not be disposed to align the railway with special reference to wheat cultivation.

Wholesale price per ton of undermentioned food-grains on 30th November and 31st May.

ON 30th NOVEMBER.

Years.	WHEAT.			RICE, 1ST KIND.			RICE, COMMON KIND.		
	At Raipur.	Cost of carriage to Nagpur.	At Nagpur.	At Raipur.	Cost of carriage to Nagpur.	At Nagpur.	At Raipur.	Cost of carriage to Nagpur.	At Nagpur.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1875-79 ...	56 0 0	8 14 6	122 11 10	80 0 0	8 14 6	144 8 3	50 14 6	8 14 6	98 8 4
1879-80 ...	60 0 0	8 14 6	190 10 8	88 2 6	8 14 6	144 8 3	44 6 5	8 14 6	201 13 1
1880-81 ...	88 9 11	8 14 6	84 15 2	74 10 8	8 14 6	131 13 2	45 11 5	8 14 6	74 10 8
1881-82 ...	28 0 0	8 14 6	65 14 1	48 11 1	8 14 6	128 0 0	25 11 11	8 14 6	74 10 8
1882-83 ...	37 12 11	8 14 6	64 0 0	46 10 8	8 14 6	119 7 6	28 7 10	8 14 6	65 14 1

ON 31st MAY.

	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1875-79 ...	45 4 0	8 14 6	112 0 0	74 10 8	8 14 6	140 0 0	50 14 6	8 14 6	112 0 0
1879-80 ...	28 9 11	8 14 6	74 10 8	80 0 0	8 14 6	140 0 0	50 14 6	8 14 6	86 2 3
1880-81 ...	27 5 1	8 14 6	48 11 1	62 8 6	8 14 6	112 0 0	25 0 0	8 14 6	74 10 8
1881-82 ...	38 9 11	8 14 6	70 0 0	55 5 4	8 14 6	124 7 1	32 6 0	8 14 6	70 0 0
1882-83 ...	47 10 7	8 14 6	62 3 7	50 14 6	8 14 6	112 0 0	22 0 0	8 14 6	70 0 0

15. Turning to imports, the estimate given by the Director of Agriculture in paragraph 11 of his letter is certainly not excessive. Mr. Fuller gives—

	Mds.
Salt ...	450,000
Piece-goods ...	120,000
Metals ...	80,000
Total ...	650,000

to which may be added 1,00,000 for miscellaneous articles and cocoanuts, which now come in large quantities from Cuttack, but which the railway will attract. The total import trade may therefore be taken at ¾ million maunds or 27,777 tons.

16. Coming now to the question whether the traffic estimated as above would render a through line to Calcutta on the broad-gauge remunerative, it would require very special knowledge, and a very careful enquiry with regard to every article of trade, to fix the point at which the attractions of Calcutta and Bombay would be equal, and where therefore trade would divide east and west. Mr. Hewitt makes an estimate much more favourable to Calcutta than I should be disposed to adopt. But I shall probably not be far wrong if I assume that Raipur forms the point of bifurcation,* and that three-fifths of the traffic goes to Nagpur and two-fifths to Burrakur.

* I ought, perhaps, to put it nearer to Bilaspur.

The calculation will then stand thus—

	Tons.
Total immediate export ...	230,000
Going to Burrakur, two fifths ...	88,000 (a)
Ditto Nagpur, three-fifths ...	132,000 (b)

Rate per—

	Tons.	Miles.	Rs.	Miles.	Rs.
† I take the rate per ton per mile at 9 pie.	(a) 88,000	x 9†	= 4,125	x 400	= 1,65,000
	(b) 132,000	x 9	= 6,187	x 190	= 11,75,530

28,25,530

Deduct 65 per cent. working expenses 18,36,594

Profit 9,88,936

To this has to be added imports 27,777 tons, which I would divide thus—

	Tons.	Gross profit Rs.
From Burrakur	6,666 giving	1,25,000
From Nagpur	21,111 „	1,88,000
	Total	3,13,000
Giving—		
	Deduct 65 per cent. working expenses	2,03,450
	Balance	1,09,550
	Grand Total Profits	10,98,486

It will be a special feature of the line in both directions that any goods that come on it will be carried long distances, i.e., nearly 400 miles on one side and 190 on the other. I have, of course, by assuming that everything is loaded at Raipur, made matters too favourable; but the error will not be very large, and I have not taken into account on the other hand the local goods traffic of Chhattisgarh.

17. It appears therefore to be probable that, as soon as the line is made and in fair working order, receipts derived only from the goods traffic of the Chhattisgarh tract will contribute 2 per cent. to the guarantee which Government is asked to grant, and that there is every reason to believe that before long* this contribution will rise to 2½ per cent. and it can scarcely then be doubted that, if we add to these receipts the following:—

- (a) from through traffic between the east and west of India;
- (b) traffic, goods and coaching, of the tract between the Central Provinces frontier and Burrakur;
- (c) coaching traffic in the Central Provinces;
- (d) mineral (i.e., coal) traffic, and timber and forest produce,

the line will return an ample interest on the cost of its construction.

And then I think that, in considering the question of profit, the Government of India should include among its direct receipts the income which it will receive from the immensely increased traffic which will be thrown on the G. I. P. (I forget how the case stands with the E. I. Line). At least half of the three-fifths of the Chhattisgarh exports, which I have assumed to go to Nagpur, will, I believe, go on to Bombay, and if the earnings of the G. I. P. are under 5 per cent., the net earnings on this traffic will all go into the pocket of Government, and if the Company is earning over 5 per cent., half will go. If any private person were trying to estimate the financial advantages of the project, he would certainly take this as a direct asset, and I do not know why Government should not do the same.

18. The following conclusions may now be recorded:—

- (1). That we might continue our narrow-gauge line *via* Bilaspur to a point north of Sambalpur, say Kolugiri, with the certainty that it would pay over and over again;
- (2). That we might turn this line into a broad-gauge line with full confidence;
- (3). That we may even venture to continue it through the long and comparatively unproductive tract between the Central Provinces border and Burrakur, and still feel confident that the project will be financially successful.

19. Doubt begins to arise only when the lines north from Bilaspur to Katni and south to Vizagapatam are taken into consideration. We may predict with considerable confidence that, so long as the through line to Calcutta carries the whole of the Chhattisgarh traffic, it will pay; but we have to admit that the line north from Bilaspur could, for some years at all events, only pay (except as a mineral line) by reducing receipts on the other line. Every maund of grain carried north will be a maund less carried east or west. The Katni and Vizagapatam lines will drain the through line of traffic, not feed it; and if the Katni line is to have its southern terminus in a region of surplus produce, it will do so at the expense of the main line.

20. The question whether the interests of the Central Provinces would be better served by the construction of the line to Calcutta, or by the opening of the line to Katni,* with a branch from Bilaspur to a point north of Sambalpur, is one of much difficulty. The northern line is urgently wanted. It will bring Chhattisgarh into connection with the railway system of Northern India, and open to its products markets which, if the main line only is made, will remain closed to them. But the main line also would confer immense benefits on the Central Provinces, and when local interests are thus balanced, Imperial considerations may very properly turn the scale, and these, there can be no doubt, demand the construction of the main line. I would therefore advise that this line should be pushed on with all possible speed: that, in the meantime, such tramways or light lines should be laid down as would enable the Bilaspur and Rewah coal to be worked, and would form part of the track of the Bilaspur-Katni line when the time for completing it arrives. The Vizagapatam line I would put last of the three.

21. The indirect advantages which free railway communication between Chhattisgarh and the outer world will bring both to Government and to the people of that tract have been so ably so often sent forth by my predecessor, Sir J. Morris, that I need only say that I most fully concur in everything that he ever wrote on this subject. What railways to the coast

* I assume that the line from Nagpur will, in any case, be carried to Bilaspur.

are, in America, to the farmers of the West, that the line which shall traverse Chhattisgarh will be to the people of that tract. And as the settlements of all the three districts of the Chhattisgarh division have only a few years to run, the interests of Government demand that railways should not only be made, but made without a day's delay. Already the time, before settlements fall in, is all too short—so short that, knowing that rents and the value of land are being violently modified, but have not reached their true level, we may not improbably find it necessary to resort to some temporary expediency for postponing the final revision of jamas. I should think, too, that military importance of the through line would not be inconsiderable, since, in the case of commotion in Upper India, it would afford an almost unassailable line of communication between Calcutta and the west of India.

22. As to the protective effect of railways, I need only refer to what Mr. Fuller has written. The following extract from the Central Provinces Administration Report of 1869-70 is also in point—

“The experience gained during the past year has thrown much light on one of the most difficult problems which present themselves in times of scarcity—the amount of the reserve grain-supplies of the country. This subject will be fully discussed in the Famine Report which is now being compiled; but it may be mentioned here that the grain stores in hand when the famine began exceeded expectation, and that their amount varied from district to district according as the means of communications with great grain markets were difficult or the reverse. The granaries of the Nerbudda valley held out well, but those of Chhattisgarh seemed quite inexhaustible.

“The enforced accumulations of previous years of plenty became the salvation of this remote tract in the time of scarcity; and paradox as it appears at first sight, it is nevertheless true that those same natural obstacles which prevented succour from being sent to Chhattisgarh when famine came, had prepared this region for the calamity by retaining its surplus produce in its local granaries.”

23. In concluding this Memorandum, I would just say that I have written under the great disadvantage of never having seen Chhattisgarh. It is, however, my intention to spend almost the whole of the approaching marching season there, and to devote special attention to the resources and requirements of this always interesting and now most important tract.

No. 729RC, dated Simla, the 17th August 1883.

From—COLONEL W. S. TRIMOR, R.E., Secretary to the Government of India,
Public Works Department,

To—The Secretary to the Bengal Chamber of Commerce.

With reference to your letter dated the 2nd May last, and to your previous communication specified marginally, I am desired to request that you will communicate to the Committee of the Chamber of Commerce the assurance

Dated 20th November 1881.
“ 9th March 1882.

that the question of railway communication between the Central Provinces and Bengal, and of the best route which such communication should follow, has for long past engaged the earnest attention of the Government of India.

2. This question, indeed, is of very old standing. As long ago as 1868, when railway extensions in Bengal were under consideration, a preliminary investigation took place. Mr. Leonard, C.E., Superintending Engineer, South-Eastern Circle, and Mr. Vernon Scholch, concurred in preferring the Burrakur to the Midnapur route on account of “the enormously heavy waterway required” on the latter, and Mr. T. E. Ravenshaw, the Commissioner of Cuttack, pointed out the “enormous cost” which it would involve.

3. Passing over the intervening period during which the Midnapur district was thoroughly examined and surveyed, in connection with the canals and protective embankments which have been constructed, I am to mention that the Government of India, when instructing the Government of Bengal in August 1881 to cause the three lines which had been suggested for connecting Burrakur and Bilaspur to be surveyed, added that—

“The Government of India, in considering the question of the direction of these lines, has preferred the northern lines to any running from Calcutta and Midnapur *via* Cuttack, because, the railways being undertaken to a great extent for famine protective purposes, it seems that the coast system of canals will partially protect this latter country. While it will be easy in the future to make a junction of the northern line from some point north of the Mahanadi river with Cuttack, should such a measure prove eventually desirable.”

4. In consequence, however, of a desire that the line from the Central Provinces should pass from the neighbourhood of Chyebassa direct to Calcutta, rather than *via* Burrakur or Sitarampur, being still entertained in some quarters, orders were issued to the Engineer-

1. Letter from the Bengal Government, No. 2948R, dated 28th July 1883.

Mr. Spring's report and estimate for the route from Dugni to Howrah, dated 17th July 1883.

Note by the Chief Engineer thereon, dated 28th July 1883.

Mr. Parker's abstract estimate of the probable cost of a broad-gauge railway from Sitarampur to Bilaspur.

2. Report by Mr. H. H. Risley, Deputy Commissioner of Manbhum, on the trade of Chota Nagpore, No. 4091, dated 7th May 1882.

Report by J. B. Fuller, Esq., Director of Agriculture, Central Provinces, on the trade and trade resources of Chhattisgarh, No. 240, dated 11th July 1883.

in-Chief, Nagpur Railway Surveys, that, in addition to locating the line from Sitarampur *via* Dugni and Raigarh to Bilaspur, provision should be made for a careful reconnaissance from Dugni *via* Midnapur to Howrah during the past cold season.

5. I am now desired to forward to you, for the information of the Chamber, the report of this reconnaissance, together with the comments of the Bengal Government thereon, and certain other information of importance in connection with the proposed line.

6. From these documents the following comparisons may be obtained :—

Distance—	Miles.	Miles.
Howrah to Sitarampur by East Indian Railway	... 138	
Sitarampur to Dugni	... 95	
		233
Howrah to Dugni <i>via</i> Midnapur	... 162	
Difference of distance in favour of Midnapur route	...	71
New line required—		
Howrah to Dugni <i>via</i> Midnapur	... 162	
Sitarampur to Dugni	... 95	
Difference, less construction, in favour of Sitarampur route	...	67
New capital required—		
		Rs.
Howrah to Dugni <i>via</i> Midnapur	... 2,08,16,717	
Sitarampur to Dugni	... 80,14,942	
Excess by adoption of Midnapur route	... 1,28,01,245	

In addition, however, to the new line, if taken *via* Midnapur, being weighted by the necessity of raising and rendering remunerative 128 lakhs of additional capital, there can be no doubt that the expenses of working would be seriously enhanced by the absence of the cheap coal obtainable at Sitarampur, and the maintenance of the bridges and embankments in so difficult a country as that between Midnapur and Howrah. That country is intersected by canals and formidable rivers. The locality receives, moreover, the flood waters of a very large tract of country to the north, and is at times under water for miles. The flood especially passes between the Roopnaraion and Damooda, where even spring-tides go two feet above the level of the county. These rivers are both tidal and navigable, and the former is very large. The bridges and flood-openings between Midnapur and Howrah will cost 65 lakhs of rupees in construction and much in maintenance, and will be permanently subject to danger from floods, and even cyclonic waves, such as that which, in 1874, flooded the station of Midnapur. Possibly some of these objections might be partly met by taking the line more to the north, but this would involve an increase of distance, without materially reducing the estimate.

7. As regards traffic, the section of the Midnapur route from that place to Dugni is very inferior in population and resources to the Sitarampur route; while the remainder is already well served by canals, on which steamers as well as boats can ply—conveyances, it may be observed, which might be formidable competitors of the railway. The contrast between the two is truly and effectively drawn in the 82nd paragraph of Mr. Risley's note. While considerations regarding local traffic are thus in favour of the Sitarampur route, those regarding through traffic shew no balance in favour of its rival. Passengers and goods would, indeed, gain somewhat in time in reaching Calcutta, but they would arrive at Howrah on the west side of the Hooghly, instead of coming straight into Calcutta itself over the bridge now under construction. But in cost it is probable that neither passengers nor goods would be gainers. The rates by the direct route would have to be calculated to cover interest on the extra 128 lakhs of rupees of capital; while the rates by the Sitarampur route would only bear interest on a share of the capital spent on the section of the East Indian Railway between Sitarampur and Calcutta, which would certainly amount to much less than the above difference. The working expenses also would, for the reasons already given, be higher, mile per mile, than on the Sitarampur line. It may be assumed therefore that no reduction in through rates would be likely to result from the reduction in distance, and that a ton of wheat from the Central Provinces could be carried as cheaply by the Sitarampur route as by the Midnapur.

8. It has been supposed in some quarters that the difficulties which the East Indian Railway has lately experienced in meeting the export trade were proof of the necessity for either two additional lines of rails, or a separate railway, in order to meet the extra traffic which the Nagpur Railway would bring to Calcutta. But these difficulties have arisen, not from inability in the East Indian Railway to carry, but from inability to discharge at Howrah with sufficient rapidity. With additional stock and shorter intervals between trains which will, of course, be provided as required, a double broad-gauge line can convey a far larger traffic than this Railway has ever been called upon to meet. It is very possible that at some future date, when the trade of the Upper Provinces and Chota Nagpur has attained a far larger development, a line from Dugni to Howrah or Hooghly may be found profitable, but at present there appears no ground for preferring it to the substantial advantages of the Sitarampur route.

9. Such being the conclusions irresistibly arrived-at on the facts presented, it does not seem necessary to notice at any great length Mr. Prestage's proposals accompanying your letter. I am, however, to offer the following brief remarks on a few points:—

- (a) Mr. Prestage's estimate of the cost of constructing the direct line is evidently much too low. It should be increased by 20 to 25 per cent;
- (b) There are strong reasons for preferring the Calcutta side of the river to the Howrah side for Wet Docks;
- (c) The estimate of 5,000 tons of wheat per diem obtainable from the Central Provinces appears very questionable.
- (d) The prime cost of wheat must be the same wherever it is shipped from. It cannot vary in the proportion of 22·32 to 6·2, as stated in paragraph 3 of the Note of 9th March.
- (e) The supposition that after the opening of a through line the Great Indian Peninsula Railway would maintain their present rates for wheat, and consequently allow Sheogaon, only 840 miles from Bombay and 832 miles from Calcutta, to be the point from which the traffic would divide, is altogether inadmissible.
- (f) The assumption that it would take two additional broad-gauge lines from Sitarampur to Calcutta to convey the traffic brought to the former by a double metre-gauge line is unintelligible. Moreover, if two extra lines will, as stated in paragraph 18 of the same Note, be required for the traffic below Patna, it is evidently wrong to debit them in paragraph 26 to the Sitarampur project.
- (g) If there be a likelihood of any such traffic as Mr. Prestage assumes, it is obvious that the broad-gauge would be preferable to the metre. Metre-gauge stock of such a nature that the paying hauled load per train shall be fully equal to that on the broad-gauge, which Mr. Prestage is understood to contemplate, is at least beyond present experience. There is, however, every reasonable probability of traffic sufficient to warrant a line on the latter gauge, which is the more necessary, in that the connection at either end will be with broad-gauge lines.
- (h) The reason for debiting the Sitarampur project in paragraph 26 with the whole cost of the bridge at Hooghly and of Docks at Diamond Harbour (or elsewhere on the east of the river), and with two-thirds of the cost of a central passenger and goods station at Calcutta is not apparent, seeing that these are in course of being provided independently of it.
- (i) The concessions and conditions proposed in the memorandum No. 2 do not appear likely to commend themselves to the money market, neither are they such as the Government of India could entertain.

The above remarks are not intended to be in any way exhaustive, but merely to indicate some of the principal preliminary objections to Mr. Prestage's proposals.

Rainfall, Weather, and State and Prospects of the Crops.

Statement showing Rainfall, Weather, and State and Prospects of the Crops in the different Districts of Bengal, as reported to Government during the week ending the 22nd September 1883.

No.	District, and date of return.	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.			
<i>Western Districts.</i>			
BURDWAN DIV.	1 Burdwan, Sept. 22 '83	Nil	Weather—very close. Rain is very much wanted, especially for the crops on the higher lands. If rain falls prospects will be good, otherwise they will be poor.
	Culna	Nil	
	Cutwa	0.25	
	Raneegunge	2.50	
	2 Bankoora, " 22 "	Nil	Weather—hot and muggy. There has been very little or no rain during the week. This sudden break in the rains has threatened the cultivators to a certain extent, but clouds are gathering, and some rain is soon expected. No damage has yet been done to the crops. The <i>aus</i> paddy is being reaped. Public health fair.
	Bishenpore	0.60	
	Maliara	1.75	
	Khatra	0.11	
	3 Beerbhoom, " 22 "	0.08	Weather—hot and dry. Rain wanted for rice crop in many parts of the district. Prices of food-grains moderate. Health of district good on the whole.
	Rampore Haut	0.73	
PRESDENCY DIV.	4 Midnapore " 22 "	0.19	Weather—hot. Rain is wanted everywhere. Prospects of paddy not yet bad. Public health good.
	5 Hooghly, " 22 "	0.30	Weather—seasonable. Crops good, but rain wanted in Jehanabad sub-division and in thana Ballaghur. Some cases of cholera in Serampore, and fever has appeared in Jehanabad. Otherwise public health pretty good.
	Howrah " 25 "	0.21	Weather—sultry and oppressive.
	Oolooberiah	0.61	Transplanting of <i>amun</i> rice complete. More rain required. Sugarcane good. Jute and <i>aus</i> rice being cut. Crops fair.
	<i>Central Districts.</i>		
	6 24-Pergunnahs, Sept. 24 '83	0.15	Weather—hot and clear. Prospects of early and late crops good. Harvesting of <i>aus</i> crop nearly over. Transplanting of <i>amun</i> finished. Rain wanted. Public health generally good.
	7 Nudda, " 22 "	.....	Weather—fine, cooler, with only occasional slight showers. Harvesting of <i>aus</i> nearly completed. Rain much wanted for <i>amun</i> . Fever has slightly increased.
	8 Khoolna, " 22 "	1.06	Weather—sultry and dry. Rice crop in the higher lands is beginning to suffer from want of rain. Other crops are doing well. Public health good.
	9 Jessore, " 22 "	0.55	Weather—hot and very dry for the season of the year. <i>Amun</i> crop is suffering from want of rain and absence of inundation. Prospects of this crop are not good. Public health good.
	Jhenida	Nil	
RAJSHAHY AND COCH Behar DIV.	Magura	Nil	
	Narail	1.3	
	Bongong	Nil	
	10 Moorshedabad, " 22 "	Nil	Weather—very hot and close. <i>Amun</i> is suffering much for want of rain. <i>Bhadai</i> harvest is almost completed; outturn expected to be fair. Public health good.
	11 Dinagopore Sept. 21 '83	2.16	Weather—cloudy, with occasional rain. Cutting of <i>bhadai</i> still continues. Late rain has done much good to <i>amun</i> , which is now doing well. Rice selling at from 17 to 23 seers per rupee.
	12 Rajshahye, " 22 "	0.18	Light winds; clear sky. Prospects good, but rain required, more especially in the north. Public health, with some exceptions, good for the time of year.
	Nattore	Nil	
	Nuwgong	Nil	
	13 Rungpore, " 21 "	6.47	Weather—hot and cloudy, with occasional rain. Prospects of winter rice and sugarcane not favourable. Jute is still being cut. Fever prevalent.
	Kurigram	2.12	
DACCA DIV.	Gaibanda	1.27	
	Nilphamari	7.8	
	14 Bogra " 22 "	0.32	Weather—still very dry and hot, as the rain keeps off. Rain very badly wanted. State and prospects of <i>amun</i> crop very unpromising. Fever still prevalent.
	15 Pubna, " 22 "	Nil	Weather—hot and sultry. Prospects of crops not good. Rivers have risen considerably. No local rain.
	16 Darjeeling, " 22 "	1.33	Weather—cloudy, with occasional rain. Crops in the hills promise well. More rain wanted for winter crops in the Terai. Public health good.
	17 Jalpigore, " 22 "	16.76	Unusually heavy rain for the season. The reports as to <i>bhadai</i> harvest and late rice are favourable; other crops poor. Public health good.
	Cooch Behar up to 19th.	6.56	Heavy rain during the week. The late rice will benefit much by the late heavy rain, and transplanting even yet going on, cultivators having been enabled to plant out in places where all hope of a crop had been given up.
	Dinbatta up to 16th.	5.41	Tobacco seedlings have, however, suffered in places. Public health good.
	Mathabhanga up to 15th.	3.20	
	Meckligunge up to 15th.	4.86	
DACCA DIV.	<i>Eastern Districts.</i>		
	18 Dacca, Sept. 22 '83	0.08	Weather—hot. Sowing of <i>rosalia</i> paddy completed and that of <i>maskalai</i> continues. <i>Aus</i> paddy and jute are being cut. Prospects of crops are good.
	Manickgunge	Nil	
	Munshigunge	0.13	
	Narsingunge	Nil	
	19 Furzedpore, " 22 "	0.39	Weather—dry, and excessively hot. The rivers luckily rose pretty high at the beginning of the week, or the continued want of rain would have become serious. They have now fallen. <i>Amun</i> is still pretty fair, and sugarcane is doing well. Fever prevalent.
	Gosalundo	0.10	
	Madaripore	0.36	
	20 Backergunge, " 20 "	0.21	Weather—seasonable. <i>Aus</i> crop has almost been gathered. Transplanting of <i>amun</i> still continues. General health good.
	21 Mymensingh, " 21 "	0.23	Weather—sultry, with heavy, leaden sky and still air. Rain wanted in west of district. Elsewhere prospects good. Steeping of jute and transplanting of rice going on. Health fair.
	Jamalpore	0.43	
	Kisboregunge	0.58	
	Attea	Nil	
	Netrokona	0.48	

No.	District, and date of return	Rainfall at Sudder Station in inches.	Character of the weather, state and prospects of the crops, and state of health at date.
BENGAL.—conold.			
Eastern Districts.—conold.			
CHITTAGONG DIV.	22 Chittagong, Sept. 25 '83	1.23	Weather—hot. Prospects good. Outturn of <i>aus</i> fair. Transplanting of <i>aman</i> finished. Prices steady. Cattle-disease still continues.
	23 Noakholly, „ 20 „	1.64	Weather—warm and sultry; rains getting rare and scanty. Reaping of <i>aus</i> rice still continues. Transplanting of <i>aman</i> paddy nearly completed. State of the young plants promising.
	24 Tipperah, „ 20 „	1.98	Light rain, and frequent wind, southerly and very light. Crops reported good; also health.
	Brahmunbaria „ „	0.04	
	Chandpore „ „	2.70	
CHITTAGONG DIV.	25 Chittagong Hill Tracts, „ 18 „	3.48	Weather—occasional showers and cloudy throughout the week. A very heavy shower of rain this morning (18th). Harvesting of <i>jum</i> paddy crop still continues. Plough paddy doing well. Prospects of cotton crop not good.
	Hill Tipperah „ 19 „	0.25	Weather—close and cloudy. Transplanting of <i>aman</i> paddy still continues. Prospects of sugarcane fair. Public health good.
BEHAR.			
PATNA DIV.	26 Patna, Sept. 22 '83	2.75	Weather—hot. Transplanting of paddy over. Reaping of <i>bhadoi</i> crops is being pushed on. Sugarcane and cotton are growing well. Cholera reported from Behar and Islampur thanas.
	Barh „ „	2.09	
	Behar „ „	2.07	
	Dinapore „ „	1.05	
	27 Gya, „ 22 „	0.19	Weather—cooler, with clouds and clear atmosphere. The rice crop must be very short. Prices fluctuating, have fallen slightly in Gya town. Health improving.
	28 Shahabad, „ 23 „	1.5	Weather—hot and cloudy at intervals. Late rain has improved prospects of crops in Arrah and Buxar. In Shahabad rain is much wanted.
	Buxar „ „	3.55	
	Bhabooah „ „	Nil	
	Sasseram „ „	4.11	
	29 Darbhanga, „ 22 „	0.96	Weather—hot and seasonable. <i>Bhadoi</i> crop is being harvested with a fair outturn. Late rain has done much good to paddy on high lands, but more is wanted. Prices of food-grains stationary. Public health fairly good.
BHAGALPORE DIV.	30 Mozufferpore, „ 22 „	4.09	Sky heavily overcast, with occasional thunderstorms; wind light or absent. Heavy, but irregularly distributed, showers have greatly improved the prospects of all crops in the sudder and Hajepore sub-divisions. Rain much wanted in the Seetamarhi Sub-division. In the inundated tracts transplanting of rice for the second time has been almost completed; in the worst parts the land is still lying waste.
	Hajepore „ „	2.22	
	Seetamarhi „ „	0.84	
	31 Sarun, „ 22 „	1.25	Weather—close and sultry, with occasional showers. <i>Bhadoi</i> being harvested. The late rain has done much good to paddy. More rain still required. Cases of fever reported. Public health otherwise good.
	Sowan „ „	3.05	
	Gopalgunge „ „	1.67	
	32 Chumparun „ 22 „	0.43	Weather—cloudy, with a little rain. Heavy rain is said to have fallen in different parts of the district, but these reports are as yet not confirmed. Rain is much wanted still. General health on the whole good.
	33 Monghyr, Sept. 22 '83	0.25	Weather—seasonable. Prospects of rice crop generally good. Much benefit done by heavy rain in Jamui sub-division, but rain in Begusarai too heavy for low land crops on the ground. Public health good.
	Begusarai „ „	6.02	
	Jamui „ „	4.59	
BHAGALPORE DIV.	34 Bhagulpore, „ 22 „	1.17	In the Sudder sub-division more rain is wanted for the winter rice. The heavy rain in the northern and southern sub-divisions has done much good, and the prospects are favourable. The autumn crop has yielded about from 8 to 10 annas.
	Panka „ „	2.57	
	Scoopole „ „	5.75	
	Muddehpoorah „ „	3.35	
	35 Purneah, „ 22 „	3.80	Weather—normal. Prospects much improved by recent rain. Slight fever in many places.
	Kissengunge „ „	2.85	
	Arrareah „ „	4.03	
	36 Maldah, „ 22 „	0.43	Rainfall very scanty and weather very dry for this season. For want of sufficient rain the transplanted rice crop is being watered where practicable by artificial means. Sowing of <i>kalai</i> has begun in the <i>diyara</i> tract of the district. Public health good.
	37 Sonthal Pergas, „ 22 „	0.45	Weather—cloudy, with bright breaks. More rain wanted at Jamtara and Godda. Elsewhere reports are favourable.
	Deoghur „ „	2.62	
ORISSA DIV.	Godda „ „	1.31	
	Rajmehal „ „	1.96	
	Jamtara „ „	1.05	
	Pakour „ „	1.10	
	38 Cuttack, Sept. 21 '83	0.15	Weather—seasonable. <i>Beali</i> being reaped. <i>Sarad</i> being wooded and thriving well. Price of rice has risen a little. Common rice selling at from 20 to 24 seers per rupee. Public health generally good.
ORISSA DIV.	39 Pooree, „ 20 „	0.85	Weather—very hot. State of crops continues good. Some slight damage done to <i>sarad</i> in places by insect. Cattle-disease reported from thanas Pipli and Pooree. Small-pox still bad in Banpur and is reported to be spreading towards Khoorda. Common rice selling at from 21 to 42 seers per rupee.
	Khoorda „ „	0.70	
	40 Balasore, „ 21 „	0.2	Weather—hot and close. State of crops continues good, except in pergunnah Bhagrai, where the late flood of the Suburnarekha caused much damage to the crops. A few cases of cholera reported from the interior, otherwise public health good.
CHOTA NAGPORE.			
South-West Frontier Agency.			
CHOTA NAGPORE.	41 Hazaribagh, Sept. 21 '83	1.86	Weather—warm and seasonable. Prospects of rice continue good. <i>Bhadoi</i> crops still being harvested. General health good.
	42 Lohardugga, „ 23 „	1.84	Weather—clear. Rain in Palamow has done immense good, elsewhere prospects fair. Slight fever in Lohardugga.
	Daitongunge „ „	5.72	
	43 Singbhoom, „ 21 „	0.46	Weather—fine, bright, slight rain, very hot, and oppressive. All crops doing well, and agricultural prospects continue favourable. General health fairly good.
	44 Manbhoom, „ 23 „	0.74	Weather—bright and warm. Prospects of all crops excellent. Small-pox continues at Topchansi, otherwise public health good.
CHOTA NAGPORE.	Govindpore „ „	1.06	

Published for general information.

CALCUTTA, STATISTICAL DEPT.,
The 25th September 1883.COLMAN MACAULAY,
Secy. to the Govt. of Bengal.

PRICES CURRENT OF FOOD-GRAINS, FIREWOOD, AND SALT IN THE DISTRICTS
OF BENGAL FOR THE FORTNIGHT ENDING 15TH SEPTEMBER 1883.

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 85. *[Faint, illegible text]*
 86. *[Faint, illegible text]*
 87. *[Faint, illegible text]*
 88. *[Faint, illegible text]*
 89. *[Faint, illegible text]*
 90. *[Faint, illegible text]*
 91. *[Faint, illegible text]*
 92. *[Faint, illegible text]*
 93. *[Faint, illegible text]*
 94. *[Faint, illegible text]*
 95. *[Faint, illegible text]*
 96. *[Faint, illegible text]*
 97. *[Faint, illegible text]*
 98. *[Faint, illegible text]*
 99. *[Faint, illegible text]*
 100. *[Faint, illegible text]*

PRICES-CURRENT of Food-grains, Firewood, and Salt in the

Number.		DISTRICTS.	RETAIL SALE:—QUANTITIES PER RUPEE BY																								
			WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULBUSH MILLET— CUMBOO, BAJRA.			GRASS MILLET— CHOLU, JOWAR.									
			Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.							
BENGAL.																											
Western Districts.																											
1	Burdwan	A	14 8	15 0	18 0	25 0	22 8	32 8	17 8	17 8	24 0	24 12	22 11	25 8	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Bankura	B	13 0	13 0	13 0	16 0	16 0	18 0	20 0	20 0	20 0	25 0	25 0	27 0	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Barrackpore	C	16 0	15 8	18 0	16 0	...	...	18 8	16 8	17 0	21 0	21 0	21 0	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Midnapore	D	18 0	13 0	13 0	17 0	17 0	16 0	18 0	17 0	21 0	24 0	24 0	25 0	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Hooghly	E	18 0	13 0	16 0	...	...	...	9 0	9 0	10 0	18 0	17 0	19 0	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Howrah		18 4	18 4	18 4	...	...	23 0	14 0	13 8	15 8	19 0	17 8	17 12	...	...	...	...	...	...	...	...	...	...	...	...	...
Central Districts.																											
7	Calcutta	F	15 0	15 6	14 9	20 10	20 10	26 14	10 12	10 12	10 0	16 0	16 0	20 0	21 5	21 5	...	20 10	23 0	...	...	...	...	...	...	...	...
8	24-Pargunnah		13 6	13 6	13 5	16 0	17 12	20 0	8 0	8 0	10 0	14 4	14 0	17 8	...	13 6	...	...	16 0	...	...	...	...	...	...	...	...
9	Nudda	G	14 8	14 8	13 14	22 15	22 15	...	14 8	15 4	15 4	17 4	17 4	19 0	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Khoolna	H	...	...	...	...	...	...	16 0	16 0	16 0	22 0	22 0	22 0	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Jessore	I	13 0	12 4	13 0	...	...	...	15 0	16 0	17 0	21 4	21 4	25 8	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Moorshedabad	J	16 0	15 0	14 8	...	...	...	15 0	15 0	14 0	22 0	22 0	20 0	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Dinapore	K	17 4	16 0	18 0	16 0	17 8	14 0	14 4	18 0	19 0	23 0	20 0	23 4	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Rajshahye	L	15 4	15 4	13 8	20 0	20 0	32 0	16 4	14 0	18 4	22 0	20 0	23 0	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Rangpore	M	13 5	13 5	16 0	...	...	...	13 5	13 5	15 0	19 0	19 0	23 0	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Bogra		24 0	15 0	18 12	...	...	...	12 12	13 0	15 12	21 12	22 8	26 4	...	...	...	...	...	...	...	...	...	...	...	...	...
17	Palna	N	18 12	18 12	17 4	...	...	...	8 4	8 8	10 0	19 0	18 12	26 4	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Darjeeling	O	8 0	8 0	11 0	8 0	8 0	10 0	5 0	5 8	5 0	12 0	13 0	15 0	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Jalpigore	P	10 0	10 0	10 0	20 0	20 0	20 0	12 8	12 8	14 0	18 0	16 0	20 0	...	...	...	...	...	...	...	...	...	...	...	...	...
Eastern Districts.																											
20	Dacca	Q	13 6	13 6	13 5	22 10	22 12	32 0	17 0	17 12	21 4	20 0	20 0	26 10	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Farrakka	R	21 0	21 0	20 0	30 0	30 0	37 8	20 0	18 0	19 4	22 0	21 0	20 8	...	...	...	...	...	...	...	...	...	...	...	...	...
22	Backergunge	S	...	...	...	...	...	...	18 0	18 0	19 0	21 0	21 0	23 0	...	...	...	...	...	...	...	...	...	...	...	...	...
23	Mymensingh	T	11 8	11 8	11 8	...	...	...	12 4	14 5	22 8	19 0	20 0	27 0	...	...	...	...	...	...	...	...	...	...	...	...	...

- A In the sub-divisions retail prices of salt are as follow:—Culina 14 seers, Outwa 12 seers, and Raneegunge 13½ seers.
 B Retail prices of salt at Raipore 11 seers, at Onda 16 seers, at Mejia, Bishupore, and Sonamukhi 13 seers, at Indas 14 seers, and at Kotulpore 12½ seers.
 C In the interior retail prices of salt range from 10½ to 13 seers.
 D In Contai retail price of salt 11 seers.
 E In Serampore retail price of salt 13 seers.
 F In the sub-divisions retail prices of salt are as follow:—Baranet and Basmirhat 13 seers, Diamond Harbour 10½ seers, Barrackpore 12½ seers, and Dum-Dum 12 seers.
 G In the sub-divisions retail prices of salt are as follow:—Koochta 12½ seers, Meherpore 11½ seers, Choochanga 13 seers, and Ranaghat 11½ seers.
 H In Satkhira and Khoolna sub divisions retail price of salt 11 seers.
 I In the sub-divisions retail prices of salt are as follow:—Jhenida, Magura, and Narail 12 seers, and Hongong 13 seers.

Districts of Bengal for the Fortnight ending 15th September 1883.

THE SEER OF 80 TOLAHS.

THE SEER OF 80 TOLAHS.																				WHOLESALE PRICES PER MAUND OF 40 SEERS.			DISTRICTS.
LIGNEE MILLER— RAGI OR MURWA AND CHHENA.						MAIZE OR INDIAN- COBN.			GRAM.			PINEWOOD.			SALT.			SALT.					
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.			
BENGAL.																				DISTRICTS.			
Western Districts.																							
S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	R.	A.	R.	A.		
...	30 0	20 0	21 0	120 0	120 0	120 0	12 13	12 10	13 8	3 0	3-0-8	2 16	Burdwan.					
...	32 0	32 0	37 0	17 0	17 0	18 0	240 0	240 0	240 0	12 0	12 11	12 8	3-3-6	3-3-6	3 2	Bankoora.					
...	21 0	21 0	20 0	160 0	160 0	200 0	11 4	11 4	11 4	3-5-3	3 7	3 8	Bearbhoom.					
...	16 0	17 0	18 0	155 0	155 0	165 0	12 8	12 8	13 5	2 14	2 14	2 14	Midnapore.					
...	17 0	17 0	20 0	120 0	120 0	120 0	13 9	13 9	13 9	3 14	2 14	2 14	Hoghly.					
...	17 12	17 0	21 0	80 0	80 0	80 0	13 0	13 0	13 0	3 0	3 0	2 14	Howrah.					
Central Districts.																				DISTRICTS.			
S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	R.	A.	R.	A.				
...	13 0	21 5	29 0	18 13	16 13	22 10	90 0	90 0	90 0	13 5	13 5	14 9	2 12	2 12	2 10	Calcutta.					
...	16 0	...	20 0	...	16 0	17 8	17 12	20 0	80 0	80 0	100 0	12 13	13 5	14 4	3 0	2 14	2 13	24-Pergunnahs.					
...	18 13	20 0	21 5 1/2	...	...	...	11 10 1/2	11 10 1/2	11 10 1/2	3-1-11	3 0	3 0	Nuddas.					
...	16 0	16 0	12 0	180 0	180 0	160 0	10 8	10 8	11 0	3 4	3 4	3 2	Khoolna.					
...	16 0	18 0	18 0	120 0	120 0	120 0	11 0	12 11	11 8	3 2	3 2	3 0	Jessore.					
...	22 0	23 0	23 0	120 0	120 0	130 0	12 8	12 8	12 0	3 2	3 2	3 2	Moorshedabad.					
...	20 0	18 0	16 0	80 0	80 0	160 0	11 0	11 5	12 0	3 6	3 6	3 4	Dinapore.					
...	22 8	21 8	20 13	240 11	240 11	240 0	13 11	12 4	12 12	3 0	3 0	3 2	Rajshahye.					
...	17 3	17 3	15 0	110 0	110 0	120 0	11 14	11 14	11 8	...	3-5-3	3-5-3	Rangpore.					
...	19 2	17 4	15 12	62 8	82 8	67 8	12 0	12 0	12 0	...	...	...	Bogra.					
...	18 12	19 0	20 0	200 0	200 0	200 0	12 0	12 0	12 12	3 4	3 3	3-1-6	Pabna.					
12 0	10 0	9 0	25 0	25 0	23 0	8 0	8 0	10 0	108 8	128 0	160 0	8 0	8 0	8 0	4 8	4 8	4 8	Darjeeling.					
...	16 0	16 0	16 0	128 0	128 0	128 0	12 0	12 0	11 0	3 4	3 4	3 4	Jalpiore.					
Eastern Districts.																				DISTRICTS.			
S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	R.	A.	R.	A.				
...	18 0	18 0	20 0	97 0	97 0	108 8	12 10	12 8	12 13	...	...	3 0	Dacca.					
...	18 0	18 0	12 0	120 0	120 0	120 0	12 0	12 0	12 0	3 5	3 5	3 2	Farredpore.					
...	18 0	19 0	18 0	120 0	120 0	100 0	13 0	13 0	13 0	2 11	2 11	2 15	Bachergunge.					
...	16 0	16 0	17 0	...	...	...	12 4	12 4	12 4	3 4	3 4	3 4	Mymensingh.					

J In the sub-divisions retail prices of salt are as follow:—Lalbagh 11 seers, Jangypore 11½ seers, and Kandi 11½ seers.

K Retail price of salt at Raigunge 10½ seers and Nitpore 12 seers.

L In Nattore and Nowgong retail price of salt 12 seers.

M In the sub-divisions retail prices of salt are as follow:—Kurigram and Nilphamari 12 seers, and Gaibanda 10½ seers.

N In Sorejgunge retail price of salt 13 seers.

O Retail price of salt at Kurseong 8 seers and Silligoree 10 seers.

P In Ahpore sub-division at Fatacotta retail price of salt 10 seers.

Q In the sub-divisions retail prices of salt are as follow:—Manickgunge 12 seers, Moonshoogunge 10 seers 10½ chittacks, and Naraingunge 12½ seers.

R In the sub-divisions retail prices of salt are as follow:—Gosaiundo and Adaripore 12 seers, Bhanga 11½ seers, and Gopalgunge 12½ seers.

S In the sub-divisions retail prices of salt are as follow:—Patakhali 9½ seers, Porozeppore 11 seers, and Bhota 9 seers.

T In the sub-divisions retail prices of salt are as follow:—Kishoregunge 10½ seers, Attea 12 seers, Jamalpore 11½ seers, and Netrokona 12½ seers.

PRICES-CURRENT of Food-grains, Firewood, and Salt in the

		RETAIL SALE :—QUANTITIES PER RUPEE BY THE																							
		WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULBURN MILLET— CUMBOO, BAJRA.			GRAT MILLET— CHOLU, JOWAR.								
Number.	DISTRICTS.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.						
		S. Ch. S. Ch. N. Ch. S.																							

* In the interior retail prices of common rice

U Retail price of salt at Kumeriah 10 seers, Hathazari 9 seers, and Cox's Bazar 8 seers.

V In the interior retail prices of salt range from 5 to 12½ seers.

W In the sub-divisions retail prices of salt are as follow :—Brahmanbariah 12½ seers and Chandpore 13 seers.

X In the sub-divisions retail prices of salt are as follow :—Buzar and Sasaram 11½ seers, and Bhabuani 10½ seers.

Y In the sub-divisions retail prices of salt are as follow :—Tajpore 11½ seers, and Madhubani 10 seers.

Z In the interior retail prices of salt range from 10 to 12 seers.

Z1 In Sevan and Gopalgunge sub-divisions retail price of salt 12 seers.

Z2 In the interior retail prices of salt range from 10 to 11½ seers.

SEER OF 80 TOLAHS.

[illegible][illegible]

23 In Janm retail price of salt 12 seers.
24 In the sub-divisions retail prices of salt are as follow :—Banka 11 seers, Mudehpura 10½ seers, and Saopula 10 seers.
25 In the sub-division retail prices of salt are as follow :—Kienkengra 10 seers and Arraich (at Ramengra) 11 seers.
26 In the sub-divisions retail prices of salt are as follow :—Deoghar 13 seers, Rajmahal 1½ seers and Godda 13 seers.
27 In Khoarda retail price of salt 13 seers.
28 In Bhadrack retail price of salt 8 seers.
29 Retail price of salt at Chitra 10 seers and Khurruckdihia 1½ seers.
30 Retail price of salt at Raghunathpore 1½ seers, Barabazar 10 seers, and Gobindpore 11 seers.

COLMAN MACAULAY,
Secy. to the Govt. of Bengal.

WHOLESALE PRICES-CURRENT of Food-grains, Firewood, and Salt in

Number.	MARKTS.	PRICES PER MAUND														
		WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			BULBUSH MILLET— CUMBOO, RAJRA.		
		Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.
		R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.	R. A. P.
1	Calcutta ...	2 11 0	2 10 0	2 12 0	1 15 0	1 15 0	1 8 0	3 12 0	3 12 0	4 0 0	2 8 0	2 8 0	2 0 0	1 14 0	1 14 0	...
2	Berhampore ...	1 13 0	1 12 0	2 8 0	...	...	...	3 12 0	3 10 0	3 8 0	2 2 0	2 1 0	1 5 0	...	...	...
3	Dacca ...	3 0 0	3 0 0	2 15 0	1 12 0	1 12 0	1 3 0	2 4 0	2 4 0	1 18 0	2 0 0	2 0 0	1 6 0	...	...	...
4	Narainpore ...	...	...	...	...	...	...	2 0 0	2 0 0	1 12 0	1 14 0	1 14 0	1 9 0	...	...	...
5	Obittagong ...	3 8 0	3 8 0	4 2 0	...	...	...	2 8 0	2 8 0	2 0 0	2 2 0	2 2 0	1 8 0	...	...	...
6	Patna ...	1 14 6	1 14 6	2 0 0	1 6 0	1 0 0	1 2 0	2 10 0	2 10 0	3 0 0	2 3 0	2 0 0	1 11 6	...	...	...
7	Bahar ...	2 8 0	2 8 0	3 12 0	...	...	...	2 3 0	2 7 0	2 0 0	1 4 0	1 4 0	1 4 0	...	...	...
8	Poorce ...	...	...	...	...	...	...	...	...	...	2 3 0	2 3 0	1 9 0	...	...	...
9	Cuttack ...	2 4 0	2 14 0	2 10 0	...	...	...	3 0 0	3 0 0	2 5 0	1 11 0	1 10 0	1 6 0	...	...	...

CALCUTTA,
The 25th September 1883.

the undermentioned Mats of Bengal for the Fortnight ending 15th September 1883.

BY 40 SHEET.

GRASS MILLET— CHOLU, JOWAR.			LARGER MILLET— KAGI OR MURWA AND CHHINA.			MAISE OR INDIAN- CORE.			GRAM.			FIRWOOD.			SALT.			MATH.
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	
R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	R.A.P.	
1 15 0	1 13 0	...	...	...	...	1 15 0	1 14 0	1 8 0	2 2 0	2 6 0	1 12 0	0 6 0	0 6 0	0 6 0	2 12 0	0 12 0	2 10 0	Calcutta.
...	2 6 0	2 2 0	2 4 0	0 6 0	0 6 0	...	3 0 0	0 11 0	0 12 0	Baranagunge.
...	3 4 0	2 8 0	1 14 0	0 7 0	0 7 0	0 6 0	3 4 0	0 4 0	3 0 0	Dacca.
...	2 0 0	2 4 0	2 4 0	0 7 0	0 7 0	0 7 0	2 14 0	0 3 0	2 0 2	Narsinggunge.
...	3 0 0	3 0 0	0 2 8 0	...	...	...	4 0 0	0 4 0	0 3 14 0	Chittagong.
...	1 4 0	1 7 0	1 0 0	1 7 0	1 7 0	1 4 0	0 5 0	0 5 0	0 5 0	3 0 0	0 3 1 6 0	0 0	Patna.
...	3 8 0	2 8 0	2 8 0	0 4 0	0 4 0	0 5 0	4 2 0	0 4 2 0	3 0	Balasore.
...	2 12 0	0 12 0	0 12 0	Pooree.
...	2 0 0	2 5 0	3 0 0	...	...	...	2 0 0	2 0 0	1 11 0	0 8 0	0 8 0	0 4 0	2 12 0	0 12 0	0 12 0	Cuttack.

Published for general information.

COLMAN MACAULAY,
Secy. to the Govt. of Bengal.

Meteorological Report of the Province of Bengal

METEOROLOGICAL DIVISION.	DISTRICT.	Representative station.	STATION OBSERVATIONS.													Average humidity at 10 A. M.	Average cloud amount at 10 A. M. for week.
			AIR PRESSURE.			WIND.		TEMPERATURE.									
			Mean barometric height, 10 A. M.	Mean reduced to sea-level.	Variation from mean.	Prevailing direction.	Mean wind velocity.	Highest during week.	Lowest during week.	Mean maximum temperature.	Mean minimum temperature of week.	Mean daily temperature of week.	Variation from normal mean of week.	Mean 10 A. M. temperature.			
ORIGINAL.	Pooree	Gopalpore	29.733	29.763	—	V	123	88.6	80.8	80.8	82.0	84.4	—	84.8	81	7.8	
		False Point	29.768	29.770	+0.012	WSW & SE	193	89.5	75.6	88.0	79.2	83.0	+0.2	85.7	76	5.0	
	Cuttack	Cuttack	29.697	29.778	+0.081	Calm	37	92.0	78.0	90.2	79.8	85.0	+1.0	87.7	74	0.3	
	Balasore	Balasore	29.731	29.779	—	SW	93	90.0	70.0	80.2	79.6	84.6	—	86.9	79	6.7	
	South-West Midnapore	Saugor Island	29.764	29.790	+0.026	S	233	90.5	78.0	89.7	80.7	85.2	+1.4	86.2	83	7.6	
	South 24-Pergunnahs	Midnapore	29.655	29.789	—	SE	—	89.5	70.8	88.4	77.7	83.1	—	87.0	75	6.3	
	24-Pergunnahs																
	Howrah	Calcutta	29.767	29.788	+0.021	SSW	80	89.5	78.2	88.8	79.8	84.1	+0.6	85.9	77	6.7	
	Hooghly																
	Burdwan	Burdwan	29.693	29.793	+0.100	S	76	93.1	78.9	91.0	80.1	86.0	+1.0	85.5	75	7.1	
SOUTH-WEST BENGAL.	Bankura																
	Boorbhoom	Ranigunge	29.569	—	—	S	65	91.0	78.8	90.0	77.6	84.1	—	85.7	76	8.0	
	West Burdwan																
	Moorshedabad	Berhampore	29.731	29.798	+0.067	SSW	90.4	92.7	78.3	91.4	79.3	85.3	—0.1	85.0	80	9.4	
	Nuddea																
	Jessore	Jessore	29.773	29.800	+0.027	S	96	92.8	77.0	90.9	78.8	84.9	+0.4	85.8	81	9.0	
	Khoolna																
	Chittagong	Chittagong	29.763	29.802	+0.039	SE	79	87.1	74.0	85.8	75.9	80.4	—1.0	83.9	83	6.9	
	Chittagong Hill Tracts	Demagiri															
	Bachergunj	Barrisal	29.787	—	—	S	214.9	88.0	78.3	80.7	79.2	82.0	—	84.0	94	3.4	
EAST BENGAL.	Noakholly	Noakholly	29.780	29.825	+0.045	SSE	35.6	87.8	77.0	88.9	77.8	82.4	—	84.1	82	9.3	
	Furzedpore	Furzedpore	29.729	—	—	S	120.7	89.5	78.0	88.4	79.3	83.9	—	85.8	77	4.3	
	Dacca	Dacca	29.781	29.816	+0.035	S	62	90.3	79.8	89.7	80.2	85.0	+0.0	86.9	74	5.3	
	Commillah	Commillah	29.798	29.834	+0.036	SSE & SE	—	88.0	76.7	82.8	77.1	80.0	—	82.9	84	6.0	
	Mymensingh	Mymensingh	29.768	—	—	SE	96	91.3	77.5	89.2	78.3	83.8	—	85.9	90	8.4	
	Bogra and Fulna	Serajgunge	29.750	—	—	S	147	91.4	78.3	89.8	77.7	83.9	—	84.9	77	7.3	
	Rajahmundry	Rampore Baulah	29.694	29.764	+0.070	SE & S	158	90.0	78.5	92.0	78.9	85.8	—	86.3	78	5.3	
	Dinapore	Dinapore	29.653	29.773	+0.120	SSE	104	92.6	78.1	90.3	79.2	84.8	—	86.0	83	8.1	
	Rungpore	Rungpore	29.688	29.813	+0.125	SE, SW	110	90.8	72.1	89.2	77.2	83.2	—	85.0	82	6.7	
	Julpigore	Julpigore	29.606	29.796	+0.190	NE	82	86.9	74.1	83.0	74.7	78.8	—	78.4	92	9.6	
NORTH BENGAL.	Cooch Behar																
	Darjeeling Hill Districts	Darjeeling	29.615	—	—	V	118	88.6	83.8	84.4	86.8	80.5	—	80.0	97	9.6	
		Dehra	29.421	29.777	+0.356	V	—	85.4	74.0	83.7	77.9	80.5	—	83.9	81	8.7	
	Shahabad	Buxar	29.639	29.770	+0.131	Calm	63	89.9	75.8	86.1	78.0	83.1	—	84.4	88	6.3	
		Arrah	29.656	29.762	+0.106	SE	65	89.4	75.6	87.4	78.3	82.9	—	83.8	86	6.1	
	Gya	Gya	29.380	29.767	+0.387	Calm	24	92.8	73.8	91.3	74.5	82.9	—2.4	86.2	80	10.0	
	Patna	Bankipore	29.648	29.771	+0.123	NE	55	90.4	76.2	89.5	79.0	83.8	—3.3	84.4	85	8.3	
	South Bhagulpore	Bhagulpore	29.631	29.776	+0.145	S	86	90.4	77.5	91.3	78.8	80.1	—	85.7	89	3.1	
	Meerghyr																
	Sonthal Pergunnahs	Doomka	29.291	—	—	S & SE	—	91.1	76.3	90.0	77.2	83.0	—	85.0	88	2.6	
NORTH BENGAL.	Purneah	Purneah	29.655	29.781	+0.126	Calm	24	90.7	77.3	89.8	78.0	84.0	—0.4	85.2	85	9.6	
	North Bhagulpore																
	Mosuffpore	Durbhunga	29.614	29.762	+0.148	E	62	88.4	78.0	86.5	80.1	83.4	—1.4	83.3	91	7.0	
	Durbhunga																
	Chumpan	Motihari	—	—	—	SE	112	92.1	75.9	88.8	77.5	81.7	—	86.8	79	5.9	
	Sarun	Chupra	29.603	—	—	V	3	90.6	75.6	86.4	78.6	83.2	—	84.2	90	6.9	
	Hazaribagh	Hazaribagh	27.779	29.773	+0.194	SW	96	86.5	73.6	85.3	73.8	79.8	+0.5	80.9	81	9.1	
	Lehardurpa																
	Manbhoom	Kanchee	27.673	29.780	+0.107	—	—	87.0	69.5	84.6	71.6	78.6	—	81.1	76	8.6	
	Singhbhoom	Chyebana	28.989	—	—	V	—	—	76.7	—	77.3	—	—	80.3	73	5.3	

Explanation of Summary.—The normal means of air pressure and temperature are the arithmetical averages or means of the readings during the same months of the atmosphere is expressed as a percentage, saturated air being represented by 100. A clear sky is denoted by 0 and an overcast sky by 100. The normal means of the rainfall are the arithmetical means or averages of the rainfall in that district determined from the returns sent in by the sub-divisions from that district, (i.e.) the total rainfall at the sub-divisional stations in the district sending in returns divided by the number of stations. A rainy

For the week ending Friday, the 21st September 1883.

Rainfall of week at observing stations.	DISTRICT OBSERVATIONS.										Representative station.	DISTRICT.	METEOROLOGICAL DIVISION.
	RAINFALL.												
	Of week.		Since 1st of month.			Since 16th May.			Average number of rainy days during the week.	Normal number of rainy days of week.			
	Mean for district.	Normal average for district.	Mean for district.	Normal mean.	Variation.	Mean for district.	Normal mean.	Variation.					
1'63			9'40	7'83	+1'57	53'84	43'16	+10'68	3'2	4'3	Gopalpore	Pooree	ORISSA.
2'90	1'81	2'39									False Point		
6'08	1'12	2'44	8'81	8'94	+1'87	30'67	41'37	+9'10	2'3	3'4	Cuttack	Cuttack	
6'87	0'75	3'01	8'23	8'81	-3'68	47'53	43'77	+3'76	2'0	3'4	Balasore	Balasore	
0'13	0'35	1'66	5'90	8'62	-2'72	48'22	80'36	-2'34	2'7	3'0	Naugor Island	South-West Midnapore	SOUTH-WEST BENGAL.
0'16	0'24	1'46	2'62	6'71	-3'09	39'96	43'01	-4'05	1'0	2'9	Midnapore	South 24-Pergunnahs	
0'17	0'40	1'42	2'03	0'25	-2'63	41'41	43'08	-2'52	2'3	3'4	Calcutta	24-Pergunnahs	
	0'08	1'26	1'67	6'62	-5'85	44'27	39'52	+4'75	0'7	2'4	Howrah	Howrah	
2'50	0'71	1'38	4'46	6'25	-1'77	40'30	44'60	+4'70	1'1	3'0	Burdwan	Hooghly	SOUTH-WEST BENGAL.
	0'18	1'61	2'83	7'58	-4'75	35'94	42'63	-6'69	0'6	2'9	Burdwan	Burdwan	
	0'04	1'37	2'04	5'79	-3'75	31'61	42'08	-11'14	0'3	2'1	Bankura	Bankura	
0'58	0'47	1'09	2'97	6'25	-3'36	30'63	40'25	-9'73	1'6	2'4	Ranigunge	Bankura	
2'62	2'34	2'07	10'27	9'03	+0'34	115'48	113'86	+2'12	3'5	3'0	Herhampore	Herhampore	SOUTH-WEST BENGAL.
0'17	0'48	1'63	4'17	8'15	-3'98	49'04	67'90	-10'26	2'6	3'5	Jessore	Jessore	
1'63	1'66	2'62	7'83	13'61	-5'78	97'07	98'77	+0'30	5'5	4'2	Chittagong	Chittagong	
0'21	0'23	1'47	2'03	6'53	-4'52	36'44	40'27	-12'63	1'0	2'4	Demagiri	Chittagong Hill Tracts	
0'01	0'07	1'66	1'44	7'85	-6'41	39'08	55'83	-14'77	0'7	2'8	Barrisal	Backergunge	EAST BENGAL.
0'22	0'68	2'24	5'06	8'19	-3'15	57'33	61'93	-4'60	2'5	3'4	Noakholly	Noakholly	
2'35	0'35	2'49	1'98	9'02	-7'04	40'46	58'69	-18'23	2'2	3'2	Furreedpore	Furreedpore	
0'13	0'04	1'01	1'38	0'62	-0'14	34'42	48'58	-14'08	0'7	2'4	Dacca	Dacca	
0'18	0'20	1'23	1'90	7'57	-5'67	29'51	45'36	-16'04	1'7	2'2	Commilla	Commilla	NORTH BENGAL.
1'61		1'59		6'80			62'00				Mymensingh	Mymensingh	
7'63	4'10	2'10	6'77	9'29	-3'53	45'07	67'16	-23'19	5'0	2'5	Serajgunge	Bogra and Pubna	
12'33	13'01	0'15	16'87	16'55	+0'38	100'37	100'73	-0'36	0'4	4'0	Rampore Beaulah	Rajshahye	
1'46		4'88		17'73			134'91				Dinagopore	Dinagopore	NORTH BENGAL.
4'67											Rangpore	Rangpore	
0'71	2'01	0'87	5'34	4'54	+0'70	29'50	33'99	-4'49	2'7	2'0	Julpigoree	Julpigoree	
0'01											Cooch Behar	Cooch Behar	
0'44	1'89	0'01	4'54	3'94	+0'60	36'88	34'85	+2'01	2'2	1'4	Darjeeling	Darjeeling Hill Districts	SOUTH BENGAL.
2'28	1'99	0'77	3'88	4'40	-0'52	40'06	33'09	+6'75	2'5	1'6	Dehree	Dehree	
1'43	2'84	0'63	4'81	4'68	-0'07	36'23	30'10	+6'13	3'0	1'6	Buxar	Shahabad	
0'49	1'16	1'81	4'00	7'04	-2'96	37'88	43'15	-5'27	2'0	2'2	Arrah	Arrah	
2'74	4'64	1'85	0'17	8'59	-2'73	49'78	60'59	-10'84	4'6	3'8	Gya	Gya	SOUTH BENGAL.
1'70	1'26	1'38	2'73	5'73	-2'97	39'89	35'70	+4'29	3'0	0'7	Bankipore	Patna	
0'87	0'86	1'29	1'19	4'83	-3'64	30'75	37'49	-6'74	2'3	1'9	Bhagulpore	South Bhagulpore	
0'05	1'07	1'11	3'88	5'04	-1'16	34'20	34'75	-0'45	3'6	1'8	Monghyr	Monghyr	
0'07	2'01	1'19	5'74	5'35	-0'39	39'69	41'78	-2'09	3'8	2'9	Doomta	South Pergunnahs	NORTH BENGAL.
1'78	1'00	1'15	6'50	5'87	+0'73	44'00	41'47	+2'53	2'3	2'5	Purneah	Purneah	
0'21	2'04	1'21	5'06	6'75	-1'71	45'25	40'00	+5'25	1'0	4'1	North Bhagulpore	North Bhagulpore	
											Mosufferpore	Mosufferpore	
											Durbhunga	Durbhunga	NORTH BENGAL.
											Motilari	Chumpanan	
											Chupra	Saran	
											Hazaribagh	Hazaribagh	
											Ranchice	Ichardugga	NORTH BENGAL.
											Nanbhoom	Nanbhoom	
											Chyebassa	Singbhoom	NORTH BENGAL.

period for the past 12 years. The variations are negative when the mean for the week is less than the corresponding normal mean and positive when greater. The number denoting cloud amount represent the part of the sky covered, the whole sky being denoted by 10. Under the head "District observations" for the period in question during the past 12 years. The "means for the district" are the numerical averages of the rainfall returns received day is one on which at least an hundredth of an inch fell.

Statement of Rainfall in Bengal for the week ending Friday (6 p.m.), the 21st of September 1883.

Meteorological division.	District.	Station.	RAINFALL.							Total.		Total rainfall from 1st to 21st September.	Average total rainfall from 1st to 21st September.	Total rainfall since 15th May.	Average rainfall from 15th May to date.		
			Saturday, 15th September.	Sunday, 16th September.	Monday, 17th September.	Tuesday, 18th September.	Wednesday, 19th September.	Thursday, 20th September.	Friday, 21st September.	Number of rainy days.	Rainfall week.						
ORTHERA	Pooree	Pooree	.....	.....	.....	.....	0.65	0.37	.....	2	0.42	10.03	0.85	47.97	36.04
		Khurda	.....	0.00	.....	.....	0.07	0.25	.....	3	0.32	8.94	0.12	57.37	43.74
		Bampur	.....	0.65	.....	.....	0.32	0.50	0.40	4	1.97	11.36	0.83	54.83	47.41
		False Point	.....	1.58	0.10	.....	.....	0.06	0.11	4	1.85	6.33	0.52	61.24	49.39
	Cuttack	Hookitola	0.32	0.11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		Jagatsingapore	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		Banki	.....	.....	0.75	0.03	.....	0.50	.....	2	0.08	10.98	7.97	01.89	51.60
		Cuttack	.....	.....	0.91	.....	.....	.....	0.07	2	0.08	10.98	7.97	01.89	51.60
	Balasore	Kandrapara	.....	.....	.....	.....	0.40	0.50	0.20	3	1.10	6.45	0.47	52.51	42.10
		Jajpore	.....	.....	1.88	.....	.....	0.30	.....	2	2.18	7.49	0.55	52.75	49.29
		Chandbali	0.10	0.89	0.45	0.05	4	1.49	5.32	0.84	51.50	41.80	
		Bhadrachuk	0.60	0.12	0.75	0.36	4	1.83	7.08	0.63	48.58	43.02	
SOUTH-WEST BENGAL.	Midnapore	Sorah	.....	.....	.....	.....	.....	.....	.....	1	Nil	.....	.....	.....	.....
		Balasore	0.06	0.04	2	0.10	5.29	0.06	50.78	45.21	
		Jo levara	0.34	1	0.34	8.6	0.06	44.07	44.07	
		Baripodah	0.77	1	0.77	7.62	0.03	47.81	44.50	
	24 Pergunnah	Contai	.....	.....	.....	.....	0.17	.....	.....	1	0.17	4.40	0.06	49.54	49.71
		Saugor Island	0.03	0.04	2	0.13	0.05	0.00	53.31	51.72	
		Tamluk	.....	.....	.....	.....	.....	0.30	.....	1	0.30	2.80	0.03	47.00	42.84
		Midnapore	0.19	1	0.19	4.11	0.07	57.87	59.09	
	Howrah	Ghatinal	0.24	1	0.24	0.01	0.24	56.00	44.22	
		Diamond Har-	0.40	0.06	.....	0.16	0.02	0.02	.....	3	0.75	6.36	0.81	41.80	50.24
		bour.	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
		Alipore Jail	0.75	.....	.....	0.01	.....	.....	0.14	3	0.30	5.00	0.04	56.84	47.18
	Hooghly	Barackpore	0.41	.....	.....	.....	.....	.....	.....	1	0.41	1.43	0.43	37.75	41.87
		Dum-Dum	0.47	.....	.....	.....	0.23	.....	.....	2	0.72	2.73	0.34	38.74	43.85
		Barisal	0.03	.....	.....	.....	.....	0.02	0.08	3	0.13	2.08	0.11	36.36	42.40
		Musoorhat	.....	.....	0.05	0.03	0.65	0.04	.....	4	0.77	3.67	0.38	53.63	43.43
	Hooghly	Howrah	0.39	0.02	0.13	0.04	0.02	5	0.66	3.21	0.73	55.71	44.78	
		Mohoreka	.....	.....	.....	0.01	.....	.....	.....	1	0.01	3.74	0.00	44.86	43.77
		Serampore	0.09	1	0.30	3.00	0.71	43.70	41.74	
		Hooghly	0.30	0.04	0.02	2	0.06	1.70	7.21	47.22	40.73	
	Burdwan	Jehanabad	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
		Culina	1	Nil	1.67	4.81	41.01	37.73	
		Burdwan	1	Nil	1.20	0.08	52.15	40.12	
		Cutwa	0.15	.....	0.10	.....	.....	.....	.....	2	0.25	2.00	0.07	34.83	40.71
	Bankura	Ransogunge	2.50	.....	.....	.....	.....	.....	.....	1	2.50	7.28	0.13	61.27	39.62
		Bankura	.....	.....	.....	.....	.....	.....	.....	.....	1	Nil	.....	.....	.....
		Dishapore	0.44	0.13	0.03	3	0.30	4.72	0.74	45.40	43.24	
		Malera	1.75	1	1.75	2.44	0.05	42.74	44.43	
	Beerbhoom	Khatra	0.11	1	0.11	6.54	0.37	40.05	50.35	
		Bh. Soory	0.02	0.01	2	0.03	2.77	7.09	0.11	61.81	45.40
		Hetampore	1	Nil	3.54	7.97	12.09	47.06	
		.....	.....	.....	.....	.....	.....	.....	.....	.....	1	Nil	.....	.....	.....
	Nuddee	Honeong	1	Nil	1.50	0.74	56.99	43.88	
		Kanungat	1	Nil	3.15	5.00	47.14	40.33	
		Kishunghur	0.06	1	0.08	2.34	0.19	21.4	30.07	
		Choudanga	1	Nil	0.08	7.28	23.88	44.16	
	Kishore	Mohoreka	1	Nil	1.40	0.05	2.7	41.17	
		Kooshton	0.20	1	0.20	2.78	0.23	52.08	45.91	
		Satkira	0.33	1	0.33	3.26	6.12	52.14	45.20	
		Baghat	1	Nil	6.47	6.00	42.22	42.07	
	Jessore	Kishore	0.44	0.03	0.37	0.22	4	1.06	4.88	7.13	34.96	40.68	
		Narail	.....	1.10	0.05	.....	0.13	.....	0.05	4	1.35	1.54	0.04	29.87	41.80
		Jessore	.....	0.50	.....	.....	.....	.....	0.02	2	0.55	2.21	0.28	34.01	40.80
		Jhondah	1	Nil	1.37	0.13	27.70	47.06	
	Moorshedabad	Magoorah	1	Nil	1.38	0.03	50.17	42.79	
		Kandi	.....	.....	.....	.....	.....	.....	.....	.....	1	Nil	.....	.....	.....
		Rampore	0.07	1	0.07	3.08	7.70	41.07	44.20	
		Hemchampur	1	0.07	5.57	7.12	45.83	42.11	
	Chittagong	Lalbach	1	Nil	2.17	7.10	35.06	43.10	
		1	Nil	1.03	8.22	30.80	41.00	
		Azamgunge	1	Nil	3.00	7.15	36.36	43.15	
		Jangipore	1	Nil	2.55	7.03	31.24	44.43	
	Chittagong Hill Tracts.	Lalcola	0.26	0.17	0.17	3	0.60	2.80	7.41	34.37	41.45	
		Cox's Bazar	0.08	1.24	0.10	3	1.67	13.01	10.85	133.02	117.47	
Chittagong		0.37	0.36	0.21	1.58	.....	.....	.....	.....	4	3.01	7.03	0.04	95.23	109.23
.....		.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Rangergunge	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
	Bankamati	0.03	.....	0.08	2.38	0.10	0.03	.....	5	2.02	0.47	0.81	60.18	72.80	
	Bama	.....	0.10	.....	1.45	.....	.....	.....	.....	1	0.10	0.18	0.18	62.25	62.25
	Agartola	.....	.....	.....	.....	.....	0.33	.....	1	0.33	5.78	7.69	48.72	62.02	
Noakholly	Patuakhali	.....	0.70	.....	.....	.....	.....	.....	.....	1	0.70	4.72	10.05	50.12	73.01
	Perozapore	.....	0.04	.....	.....	.....	.....	.....	.....	1	0.04	0.45	7.27	44.77	61.77
	Burisal	0.60	.....	0.04	0.18	.....	.....	.....	3	0.21	8.42	7.97	43.31	67.86	
	Bhola	0.01	0.06	0.02	0.04	.....	0.18	.....	5	0.30	8.80	7.92	61.10	74.22	
Furriedpore	Noakholly	0.28	0.04	0.02	0.41	0.19	0.05	0.11	7	1.72	0.87	13.15	94.95	55.65			
	Penny	0.20	0.09	.....	0.02	0.03	.....	.....	4	1.29	5.80	14.10	92.32	92.32	
	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Dacca	Madaripore	.....	.....	.....	.....	0.21	.....	.....	.....	1	0.21	2.72	5.00	34.54	45.06
	Furriedpore	.....	0.38	.....	.....	.....	.....	.....	.....	1	0.38	2.42	7.38	30.00	52.41
	Cochin	.....	.....	.....	.....	0.0	.....	.....	.....	1	0.10	0.30	0.33	36.20	47.00
	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Comilla	Munshigunge	.....	.....	.....	0.13	.....	.....	.....	.....	1	0.13	.....	0.57	64.25	64.25
	Dacca	.....	0.08	.....	.....	.....	.....	.....	.....	1	0.08	1.94	0.18	39.75	42.00
	Namugunge	.....	.....	.....	.....	.....	.....	.....	.....	1	Nil	1.63	.....	.....	.....
	Manekgunge	.....	.....	.....	.....	.....	.....	.....	.....	1	Nil	1.14	0.83	39.30	41.20
Myneemugh	Comilla	0.04	0.30	0.14	1.13	0.15	0.08	.....	6	1.88	3.08	6.88	61.70	67.41		
	Chandipore	.....	0.45	.....	.....	.....	.....	.....	.....	1	0.45	4.80	0.07	56.15	74.20
	Brabmanberia	.....	.....	0.04	.....	0.02	.....	.....	.....	2	0.06	0.71	7.81	47.85	53.05
	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Myneemugh	Kishoregunge	.....	.....	0.58	.....	.....	0.10	.....	2	0.77	1.16	0.73	50.31	61.01	
	Atin	.....	.....	.....	.....	.....	.....	.....	.....	1	Nil	2.21	0.06	40.27	49.08
	Myneemugh	0.02															

Statement of Rainfall in Bengal for the week ending Friday (6 p.m.), the 21st of Sept. 1883—concluded.

Meteorological division.	District.	Station.	RAINFALL.							TOTAL.		Total rainfall from 1st to 21st September.	Average total rainfall from 1st to 21st September.	Total rainfall since 15th May.	Average rainfall from 15th May to date.
			Saturday, 15th September.	Sunday, 16th September.	Monday, 17th September.	Tuesday, 18th September.	Wednesday, 19th September.	Thursday, 20th September.	Friday, 21st September.	Number of rainy days.	Rainfall week.				
NORTH BENGAL.	Pubna	Pubna	.....	.....	.....	.....	0'07	.....	.....	1	Nil	1'30	7'00	27'18	41'92
		Seraungunge	.....	.....	.....	.....	.....	.....	.....	1	0'07	1'50	6'70	40'65	45'16
	Bogra	Sherpore	.....	.....	.....	.....	.....	.....	.....	1	Nil	0'63	6'29	30'23	54'00
		Nowkhilla	.....	.....	.....	.....	.....	.....	.....	1	0'05	1'00	5'30	25'03	47'06
		Bogra	.....	0'25	0'04	.....	.....	0'03	.....	1	0'03	0'84	7'12	36'22	57'32
		Panchbibi	.....	.....	.....	0'13	.....	.....	.....	1	0'13	1'47	6'07	29'80	48'80
	Rajshahye	Beauloh	0'17	.....	.....	.....	.....	.....	.....	2	0'16	3'37	6'77	26'12	45'12
		Nattore	.....	.....	.....	.....	.....	0'01	.....	1	Nil	0'05	7'08	24'77	47'01
	Maldah	Maldah	.....	0'16	0'22	.....	.....	.....	0'03	3	0'43	1'38	8'06	30'19	43'33
		Dinajpore	.....	.....	0'09	.....	.....	.....	.....	1	0'09	2'85	7'76	34'67	58'37
	Dinajpore	Churamon	1'05	0'75	0'71	.....	.....	0'10	0'00	5	4'17	5'75	11'70	35'45	67'17
		Raigunge	1'46	0'03	0'02	.....	.....	0'10	0'10	5	1'81	3'53	7'70	39'57	51'11
		Dinajpore	0'75	0'19	0'72	0'20	0'05	.....	0'20	6	2'11	2'43	8'12	40'39	52'51
		Balooghut	.....	.....	.....	.....	.....	.....	.....	1	Nil	0'77	.....	33'90	.....
	Rungpore	Bhawanigunge	0'10	.....	.....	.....	.....	.....	.....	1	0'10	1'47	8'01	44'35	53'90
		Rungpore	0'34	4'03	0'50	0'24	0'03	0'67	0'27	7	6'09	7'15	0'35	44'09	61'34
		Kurigram	1'40	0'08	.....	0'04	0'16	1'19	1'08	6	5'03	8'23	8'69	43'28	67'14
		Bagoogra	1'40	0'04	1'43	1'15	0'08	0'21	.....	6	4'90	9'24	10'19	62'04	80'77
	Julpigore	Julpigore	4'34	3'54	0'13	0'24	6'35	3'68	0'36	7	16'76	22'91	17'41	126'67	101'51
		Dinhatia	0'84	3'09	0'05	0'91	0'13	0'48	.....	6	6'39	8'12	18'51	63'83	93'80
	Cooch Behar	Cooch Behar	3'33	1'45	0'82	.....	.....	8'37	3'38	6	18'45	19'50	14'93	111'70	102'70
		Mackhunge	0'72	4'50	0'13	0'15	0'17	4'42	0'83	7	11'38	15'62	14'23	90'00	89'13
		Matahaunga	0'90	3'49	1'22	1'24	0'15	3'02	3'27	7	14'00	17'50	17'01	113'20	100'66
	Darjeeling Hill.	Buxa	0'10	1'84	0'90	0'04	5'70	0'03	.....	6	8'70	20'48	24'05	165'50	170'45
		Siliguri	0'01	1'70	.....	.....	0'00	0'02	0'35	5	2'08	5'00	.....	90'00	93'37
		Darjeeling	0'30	0'87	0'45	0'15	.....	.....	.....	4	1'33	7'89	11'43	90'00	93'37
	Kahimpore	Kahimpore	0'05	.....	.....	.....	0'23	.....	.....	2	0'30	5'13	.....	76'03	.....
NORTH BENGAL.	Purneah	Kisengunge	0'88	.....	1'06	.....	0'30	0'43	3'10	5	8'70	6'67	6'09	68'12	80'33
		Arracah	0'05	.....	.....	.....	1'09	1'15	1'40	4	4'40	9'40	0'22	34'00	51'87
		Purneah	1'16	0'03	0'11	0'07	1'06	.....	.....	5	3'62	4'67	11'45	24'00	51'87
	North Bhagulpore.	Maddapore	0'50	0'03	.....	.....	0'03	2'30	.....	4	3'33	4'17	7'16	54'50	40'54
		Soopool	0'04	.....	0'10	2'35	2'29	.....	0'00	5	5'58	6'35	7'25	44'17	62'33
	Durbhunga	Tajpore	0'10	1'41	.....	0'41	.....	.....	.....	3	1'02	4'55	4'97	42'71	54'51
		Durbhunga	0'88	.....	.....	0'05	.....	0'06	.....	3	1'79	2'09	6'74	39'45	38'07
		Madhubani	0'70	.....	0'15	.....	.....	0'18	.....	3	1'03	1'03	0'84	40'10	30'51
	Moufferpore	Sitamari	.....	.....	0'09	.....	.....	.....	0'07	2	0'16	0'08	5'17	31'58	34'18
		Moufferpore	2'05	.....	1'83	0'16	.....	0'05	.....	4	4'00	4'04	5'00	40'42	30'09
	Hajipore	Hajipore	.....	.....	0'10	1'72	.....	0'31	.....	3	2'19	3'49	6'08	33'61	34'53
	Chumpan	Motihari	.....	.....	0'29	0'14	.....	.....	.....	2	0'43	0'48	5'04	33'87	35'52
		Bettiah	.....	.....	0'28	.....	.....	.....	0'75	2	1'13	1'41	4'42	32'07	30'31
	Sarun	Gopalgunge	0'78	.....	0'21	0'09	.....	.....	.....	3	1'03	1'74	5'03	26'35	37'65
		Sewan	0'57	0'79	0'22	0'30	0'16	.....	.....	6	2'34	4'09	5'17	32'13	37'17
		Chuprah	0'35	.....	.....	.....	.....	.....	1'26	2	1'00	3'08	4'73	36'40	32'45
SOUTH BENGAL.	Shahabad	Roxar	.....	0'50	0'37	.....	.....	0'30	.....	3	1'17	5'91	4'40	33'11	31'79
		Dehree	.....	1'50	1'40	1'18	0'60	.....	.....	3	1'30	4'73	4'79	26'70	35'70
		Bhuboah	.....	1'20	.....	0'10	.....	.....	.....	2	4'06	7'58	4'48	27'05	34'08
		Sasserain	.....	3'70	.....	.....	0'30	.....	.....	2	1'50	2'74	4'44	28'08	33'45
	Gya	Aurungabad	0'18	1'11	3'57	.....	.....	.....	.....	3	4'66	6'87	4'24	31'24	35'87
		Gya	.....	.....	0'04	.....	0'15	.....	.....	1	0'10	8'53	4'42	45'47	45'45
		Nowadah	.....	.....	.....	.....	0'50	.....	.....	1	0'50	3'32	4'17	31'80	34'45
	Jehanabad	Jehanabad	.....	0'00	0'40	.....	0'50	.....	.....	2	1'00	5'30	2'57	40'60	33'70
	
	
	Patna	Patna	.....	0'50	.....	0'05	1'30	.....	.....	3	2'75	4'53	4'51	30'34	34'94
		Dinapore	.....	.....	0'25	0'36	0'10	.....	.....	3	0'43	2'50	4'29	29'30	33'15
		Behar	.....	1'48	.....	0'45	1'18	.....	.....	3	3'11	4'43	4'02	36'06	39'78
	Monghyr	Monghyr	.....	0'20	0'06	.....	0'23	0'00	.....	3	1'42	4'01	4'30	38'40	33'40
		Begoesrai	.....	2'00	0'49	0'57	1'57	0'06	.....	5	6'50	8'47	4'41	40'02	33'61
	South Bhagulpore.	Monghyr	.....	0'14	.....	0'11	.....	.....	.....	3	0'25	2'85	5'79	25'57	30'76
		Jamui	0'80	.....	2'30	0'20	0'22	.....	.....	4	3'71	5'83	5'91	36'24	37'24
	Bhagulpore.	Bhagulpore	.....	.....	0'06	0'21	.....	.....	.....	2	1'17	2'03	6'20	34'00	33'00
		Bauka	.....	.....	0'21	.....	.....	.....	.....	2	2'57	4'57	6'51	31'40	30'00
	Sonthal Per-gunnahs.	Rajmehal	.....	0'06	1'17	0'43	.....	.....	.....	3	1'00	5'54	8'09	20'40	44'54
		Godda	.....	0'04	1'47	.....	.....	.....	.....	2	1'51	6'01	6'30	32'31	39'30
		Pakour	.....	.....	1'10	.....	.....	.....	.....	1	1'10	6'40	8'30	45'39	44'51
		Nya Doomka	.....	0'16	0'27	.....	.....	.....	.....	2	0'43	1'80	7'74	44'06	44'41
		Doughur	.....	1'47	.....	.....	.....	.....	.....	2	1'08	3'09	6'30	30'54	44'70
CENTRAL NAGPUR.	Hazaribagh	Jamtara	.....	0'46	0'32	.....	.....	.....	.....	2	0'78	3'53	4'51	20'35	42'09
		Pachamba	.....	1'73	1'00	0'06	0'03	0'03	.....	5	3'43	5'14	6'01	30'05	41'27
		Hazaribagh	.....	1'21	1'30	0'00	1'43	.....	.....	4	4'05	10'07	5'57	44'51	49'79
		Semtauri	.....	0'53	.....	1'32	0'10	.....	.....	3	1'05	7'84	4'75	36'00	41'00
	Lohardugga	Mahudi Hills	1'23	.....	0'78	.....	.....	.....	.....	.....	.....	4'77	.....	43'44	.....
		Ranchi	.....	1'52	0'32	.....	.....	.....	.....	2	1'84	8'03	6'73	54'74	44'40
	Singhbhum	Palamow	.....	0'83	1'40	.....	.....	0'20	.....	3	2'63	7'35	4'00	31'24	37'24
		Chyobasan	.....	0'46	.....	.....	.....	.....	.....	1	0'46	5'04	6'75	46'25	40'00
	Manbhum	Purulia	.....	0'33	0'42	.....	.....	.....	.....	2	0'74	5'36	5'04	53'07	43'17
		Gobindpore	.....	0'10	1'30	.....	.....	.....	.....	2	1'06	5'02	5'84	33'01	40'97

Explanation.—Indicates that no rain has fallen. If the return for any day has not been received, the corresponding space is left blank. If some of the returns are wanting, the corresponding spaces in the total rainfall columns are left blank.

SUMMARY OF THE METEOROLOGICAL AND RAINFALL OBSERVATIONS
TAKEN IN BENGAL FOR THE WEEK ENDING FRIDAY,
THE 21st SEPTEMBER 1883.

At the close of the previous week, as had been noticed in the usual report, a well pronounced break in the rains had commenced in Orissa, South-West Bengal and East Bengal, though rain had continued to fall, and in many cases in considerable amounts, in Behar and North Bengal. These conditions have continued to hold throughout the week now under review, and even up to its close there were no signs of any probable alteration, or of the break in the rains giving way in the districts above-mentioned, but rather the area of rainfall has been gradually contracting, and during the last day or two only North Behar and North Bengal were receiving any noticeable amounts of rain. As was also pointed out in the summary for the previous week, pressure had been steadily increasing for many days in all districts, and at the commencement of the present week, it was fully equal to the normal. This slow increase of pressure has continued almost without a break during this week, and, as a consequence, the barometer now shows a pressure in all districts very appreciably above the normal. With the establishment of this comparatively high pressure over the Province, the monsoon winds have also been steadily diminishing in force throughout this period, and only light, and in many cases variable, winds have prevailed in almost all districts for the greater part of the week. The area of rainfall, as noticed above, has therefore also steadily diminished, and thus a strongly marked break in the rains over a very large portion of the reporting area has been brought about. This is the first general break in the rains of any considerable importance which has occurred during the present monsoon in the Lower Provinces, and as the indications or conditions are not at present favourable to any immediate inrush of moist monsoon winds over the land area, it is probable that the break in the rains will become even more marked than it has been during this week.

It is of course evident that a very weak monsoon current must have been blowing in Bengal during the past week, and if the strength and volume of the current can be at all accurately judged by the wind velocities, it would appear, from the numbers in the meteorological tables of this and of the previous week, that the average wind velocity or the strength of the monsoon current of the past week is certainly not two-thirds of that of the previous week. The reduction of wind velocity during the past week is at some stations almost startling. Thus at Chittagong, in the week ending September 14th, the average daily wind velocity was 158 miles, during the past week it has been 79 miles only; again at Dacca the daily wind velocity in the second week of September was 113 miles: this week it has been 62 miles. It is therefore clearly evident that there has been a comparatively sudden, and at the same time a serious, reduction in the strength of the monsoon current during the past week, and, as is usually the case when a light monsoon is blowing, great irregularities in the distribution of the rainfall have occurred in those areas which have been receiving rain. Thus, to take one instance only, while Siliguri reports a rainfall for the week of 2.98 inches, Julpigori, which is the nearest reporting station to it, and is in fact only 24 miles away from it, has received 16.76 inches during the same period. These irregularities will be again referred to when the district rainfalls are being considered.

As has been already stated, pressure was at the commencement of the week about equal to the normal, and there has been a steady though slow general increase since. Consequently the average pressure for the week is above the normal at all stations except one; the exception, which appears to be a purely local one, is at Gya, which has reported a pressure below the normal by .003", but on the other hand the neighbouring station of Patna reports an excess of 0.020". The excess pressure over the whole Province averages 0.034", which is of course considerable, while at the respective stations the excess ranges from 0.018" at Durbhanga to 0.014" at False Point. With the comparative and at many stations complete absence of rain from Orissa, South-West Bengal and East Bengal, and which of course has been accompanied by a considerable clearing of the sky, temperature over these areas has been steadily rising, and on the average for the week it has been distinctly above the normal. In Behar and North Bengal, on the other hand, where at many stations heavy rain has been falling, the temperature has been below the normal by as much as 2° to 3° in several cases, though the average amount is smaller than this.

The following table gives the usual summary of the temperature and rainfall data for each of the seven meteorological divisions of the Province:—

METEOROLOGICAL DISTRICT.	TEMPERATURE.						RAINFALL.									
	Highest observed during week.	Lowest observed during week.	Average for week.			Average mean of week above or below normal mean week.	Of week.			Rainy days.			Since 1st of month.		Since May 15th.	
			Of highest of each day.	Of lowest of each day.	Of mean for each day.		Average.	Normal average.	Variation.	Average number in week.	Normal average number.	Variation.	Average.	Normal average.	Average.	Normal average.
Orissa	92.0	75.0	88.7	80.3	84.4	+0.0	1.17	2.67	-1.50	2.6	2.7	-1.2	7.47	7.97	69.97	42.05
South-West Bengal	93.1	76.8	90.5	79.1	84.7	+0.7	0.34	1.47	-1.13	1.3	2.8	-1.6	8.05	6.46	43.33	44.11
East Bengal	91.3	74.0	87.1	78.3	82.7	-0.4	0.75	2.22	-1.47	2.4	2.4	-1.0	4.31	6.78	54.61	67.36
North Bengal	92.6	72.1	80.0	77.5	83.3		4.15	2.70	+1.45	3.1	2.8	+0.3	0.16	9.39	53.55	64.56
North Behar	92.1	75.5	87.7	78.5	83.1	-0.9	2.53	1.32	+1.21	3.4	2.0	+1.4	3.67	6.45	41.88	40.37
South Behar	93.4	72.3	83.6	77.7	83.2	-2.4	1.06	1.00	+0.04	2.7	1.9	+0.8	4.54	5.14	34.50	36.27
Chutia Nagpur	87.0	69.5	85.4	72.7	79.1	+0.5	2.14	1.18	+0.90	2.8	2.9	-0.1	7.33	5.74	42.56	43.11

As has been mentioned above, there has been a distinct break in the rains during the greater part of the week in South-West Bengal, Orissa, and East Bengal, but rain has continued to fall in considerable amounts in North Bengal, Behar, and Chutia Nagpur. The numbers given in the preceding table shew this fact clearly, and while the first three divisions are there shewn to have received a rainfall in defect of the normal, the other divisions have recorded a considerable excess. Expressed in percentages of the normal fall, the rainfall during the week in South-West Bengal has been 77 per cent in defect, in Eastern Bengal it has been 66 per cent in defect, and in Orissa 56 per cent below the normal. On the other hand, North Bengal has received a rainfall 53 per cent in excess of the normal amount, Chutia Nagpur a fall 81 per cent in excess, while the whole of Behar has received a rainfall over 90 per cent in excess of the normal fall, a nearly double the usual quantity. The number of rainy days in each division follows pretty closely the numbers above given, that is, there has been an excessive number of days of rain in those districts receiving excessive rain, and a very small number of days of rain in the districts of deficient rainfall.

Taking up the rainfall distribution more in detail, it will be found that in very many instances, the variations from the normal fall and even from the average falls of the districts as shown in the above table have been during the past week excessive. In Orissa, the Balasore district has been more largely in defect than the Pooree or Cuttack districts, and at Sorah and Balasore rainfall has been practically absent. In South-West Bengal, in the Nuddea district, out of six reporting stations only two stations received slight showers during one day, the largest rainfall in this district for the whole week being two-tenths of an inch at Koochta. The greater part of the Burdwan district was in an almost similar condition, and Raneegunge was the only station which received one heavy shower in one day in the week. The Hooghly, Beerbhoom, Khoolna, Moorshedabad, and Midnapore districts were almost equally rainless, but the 24-Pergunnahs districts received decidedly more rain. In East Bengal, the greatest deficiency was in the Dacca and Furreedpore districts, while the Chittagong district actually received a fall equal to the normal. Passing now to the divisions which received a rainfall in excess of the normal, in North Bengal the abnormal variations are quite extraordinary. Thus, the districts of Pubna, Bogra, Rajshahye, and Maldah were practically rainless during the week, and on only one or two days at isolated stations slight showers fell. On the other hand, the Dinagore, Rungpore, and Darjeeling districts received considerable amounts of rain in almost every day in the week, and the Julpigoree and Cooch Behar districts were positively deluged with rain. Thus, Julpigoree reported 16·76 inches, Cooch Behar 16·45 inches, Matabhanga 14·09 inches, and Micklegunge 11·38 inches during the week. In North Behar, the excess rainfall seems to have been particularly heavy in the Purneah and North Bhagulpore districts, but elsewhere there are no other extreme variations to remark. In South Behar and in Chutia Nagpur also, when considering the district rainfalls, there are no striking variations from the average excess shewn above, though the stations of Gya, Nowadah, and Monghyr have received comparatively small amounts of rain.

Saturday, 15th September.—Pressure increased generally by small amounts. The increase was largest in East Bengal and Orissa, but the changes scarcely affected the relative distribution of pressure, which did not vary largely from the normal, though there was a slight defect from the normal at some stations in South-West Bengal, and a slight excess pressure in Orissa. Temperature was abnormally high in South-West Bengal and in Orissa, but was comparatively low in Behar and Chutia Nagpur. Temperature was in excess by 2° to 3° in South-West Bengal, and equally below the normal in South Behar. Winds had not changed in direction much since the 14th. South-westerly winds generally prevailed in Orissa, South-West Bengal, and Chutia Nagpur; south-easterly winds in East and North Bengal; while the winds in North and South Behar were a little irregular. In most districts wind velocities were small and had

scarcely changed, but in North Bengal they had increased, and in Behar they had decreased in force. Humidity was fairly low in Orissa, East and South-West Bengal, but was high in North Bengal and at most stations in North Behar. The amount of cloud was increasing slightly, and was rather large in most districts. Orissa was almost completely rainless, while a few local showers fell in South-West and East Bengal, in South Behar and in Chutia Nagpur. The most general rain fell in North Bengal and North Behar, where at many stations considerable amounts were reported. The heaviest rainfalls to-day were—Julpigoree 4.34 inches, Cooch Behar 3.88 inches, Raneeunge 2.5 inches, Banka 2.36 inches, Mozufferpore 2.05 inches; while the following stations received amounts in excess of one inch:—Maliara (Bankoora district), Ohuramon, Raigunge, Kurigram, Bagdogra, Purneah, and Mahoudi Hills.

Sunday, 16th September.—Pressure again increased by small amounts at most stations, and generally speaking the increase of pressure was least at the southern stations. Pressure was slightly above the normal in most districts except in South Behar. Temperature continued rather high in South-West Bengal, and was above the normal, though it had fallen slightly during the past twenty-four hours. Temperature was considerably below the normal in Behar, the defect at Gya being more than 3°. Winds were light, and in some districts rather variable. In South Behar, in particular, wind directions were decidedly unsteady. In East and North Bengal wind directions were mainly south-easterly, and in Orissa and South-West Bengal they were southerly and south-westerly. In all cases winds were moderate in force. The larger portions of South-West Bengal and Orissa were again rainless. East Bengal and North Behar reported a few local showers only, while very heavy rain was falling over the greater part of North Bengal, South Behar, and Chutia Nagpur. Thus Rungpore reported 4.63 inches, Mickligunge 4.56 inches, Dinhatta 3.99 inches, Sasseram 3.76 inches, Matabhanga 3.49 inches, Begooesrai 2.99 inches, and Julpigoree 2.54 inches; while the following stations reported amounts in excess of one inch:—Ranchee Hazaribagh, Pachamba, Behar, Aurangabad, Bhabooah, Dehree, Tajpore, Siliguri, Buxa, Cooch Behar, Cox's Bazar, Narail and False Point.

Monday, 17th September.—The changes of pressure were a little irregular, though on the whole the barometer was rising. Pressure was comparatively low in South Behar and in Orissa. Pressure was, however, above the normal of the day by amounts which varied from .099" at Durbhanga to .011" at Hazaribagh. Temperature was generally rising in most districts by small amounts. It was decidedly above the average in South-West Bengal, in Chutia Nagpur, and at some stations in East Bengal, though it was below the normal in North Behar. Winds continued southerly and south-westerly in Orissa and South-West Bengal, and south-easterly in East and North Bengal, but in Behar wind directions were rather variable. At some stations in Behar and Chutia Nagpur calms were reported. Wind velocities had scarcely changed, and in most districts light to moderate winds were blowing. Humidity was generally almost unchanged, though in South Behar it had increased. The amount of cloud had also decidedly increased in most districts. South-West Bengal was again practically rainless; a few local showers were received in Orissa and East Bengal, but again heavy rain continued to fall in some parts of North Bengal, in Behar, and in Chutia Nagpur. The heaviest rain was received in South Behar. The following are the largest amounts reported:—Aurangabad 3.57 inches, Jamui 2.30 inches, Jajpore (Cuttaok district) 1.88 inches, Mozufferpore 1.83 inches, Gobindpore 1.5 inches; while the following stations received amounts between one and one-and-a-half inches:—Hazaribagh, Pachamba, Palamow, Deoghur, Pakour, Godda, Rajmehal, Dehree, Kissengunge, Matabhanga, and Bagdogra.

Tuesday, 18th September.—Pressure continued to rise over the greater part of the Province, but a fall commenced at the southern stations in Orissa, and at some of the stations in East and North Bengal. Pressure was above the normal at all reporting stations by amounts ranging from 0.114" at Durbhanga to 0.026" at Gya. Temperature had risen considerably in Orissa, though in the other divisions the changes were variable and not large. Temperature was considerably above the normal in South-West Bengal and Orissa, though it was much below the normal in Behar and at some stations in East Bengal. Winds became more southerly in Orissa and South-West Bengal. They remained south-easterly in East and North Bengal, and were rather more normal in direction in Behar. Wind velocities, however, in all cases continued small. Humidity remained moderate in Orissa and South-West Bengal, but increased at many stations in North Behar and North Bengal. The amount of cloud was small in Orissa and South-West Bengal, and was fairly high in other districts. A few light local showers fell in South-West Bengal and Orissa; showers were a little more numerous in East Bengal, while fairly general rain, generally moderate in amount, fell in some districts of North Bengal and in most districts of Chutia Nagpur and Behar. Rainfall was not, however, so widely distributed or so heavy in these districts as on the 17th instant. Soolpore (North Bhagulpore district) received 2.55 inches, Rangamati 2.38 inches, Chittagong 1.88 inches, Setamghur 1.32 inches, Matabhanga 1.24 inches, Dehree 1.18 inches, Bagdogra 1.15 inches, and Comilla 1.13 inches.

Wednesday, 19th September.—Pressure now fell in all districts by amounts which averaged from three to four hundredths of an inch. Notwithstanding the decrease of pressure, the barometer was still above the normal in all districts by amounts ranging from .05" at Chittagong to a nearly normal pressure at False Point. Temperature continued to increase by small amounts in South-West Bengal, Orissa, and Chutia Nagpur, though it had not changed much in the other divisions. It was decidedly above the normal in Chutia

Nagpur, South-West Bengal, and Orissa, and was below it in East Bengal. Winds had become a little more irregular in South-West Bengal and Orissa, and were not so strongly southerly as on the 18th. In East Bengal, winds were strongly south-easterly, while in North Bengal and Behar they were little irregular. In all cases, however, wind velocities were very small. Humidity continued high in North Bengal, Behar, and Chutia Nagpur, but in other districts it was moderate for the time of year. The amount of cloud was also rather large in the last-named districts, though much smaller in East Bengal, Orissa, and South-West Bengal.

Rainfall was to-day almost entirely confined to certain districts in North Bengal and North Behar, and to South Behar, where the rainfall was most general. In other divisions only local showers occurred. The rainfall was particularly heavy at the foot of the hills where Julpigoree reported 6.45 inches. The other rainfalls which call for notice are Banpur 2.52 inches, Soopool (North Bhagulpore) 2.29 inches, Hajipore 1.72 inches, Begoozerai 1.67 inches, Hazaribagh 1.45 inches, Patna 1.30 inches, Behar 1.18 inches, and Arrareah and Purneah 1.08 inches.

Thursday, 20th September.—Pressure continued to fall slightly at the majority of the reporting stations, though at some stations in North Behar and North Bengal an increase had commenced. Pressure was relatively low in Orissa, where it was below the normal by rather more than 0.01". In all other divisions it was above the normal by amounts which varied from .001" at Saugor Island to .067" at Durbhanga. The changes of temperature were small and variable. Temperature still remained rather above the average in Orissa, in South-West Bengal, in Chutia Nagpur, and at some stations in East Bengal, but was generally below the normal in Behar. Winds were more regular in direction in Behar, where south-easterly winds generally prevailed. They were, however, still irregular in Orissa. In other districts wind directions were usually southerly or south-easterly. Wind velocities continued moderate in all divisions. Humidity and cloud proportion were about equal to the average in all districts, except North Behar, where humidity was rather high.

Rain was almost entirely absent from South-West Bengal, South Behar, Chutia Nagpur, and East Bengal. Light local showers fell in Orissa, but general, and in many cases very heavy rain fell in several divisions of North Bengal and North Behar. The rainfall was excessive in the Cooch Behar district: thus Cooch Behar reported 8.37 inches, Micklegunge 4.82 inches, and Matabhanga 3.92 inches. Julpigoree also received 2.68 inches, Maddapore 2.20 inches, Kurigram 1.19 inches, and Arrareah 1.18 inches.

Friday, 21st September.—Pressure now increased by small amounts at almost all stations. The rise was greatest at some stations in South Behar, and least in East Bengal. Pressure still remained comparatively low in Orissa. Temperature had increased considerably in North Bengal, and to a smaller extent in East Bengal. In other divisions the changes were slight only. Temperature was above the normal in all divisions, except Behar. Winds were again a little irregular in most districts. In Orissa and Behar the irregularity was very marked. Wind velocities remained moderate in all districts, while in North Behar half the stations reported calms. Humidity was rather high in North Behar, and at some stations in North Bengal and South Behar, though it was moderate in amount in East and South-West Bengal. Cloud proportion appeared to be slightly increasing.

Rainfall was confined to the same areas as on the 20th, and with the exception of certain districts in North Bengal and North Behar, the whole Province was practically rainless. The heaviest rainfalls reported to-day were Matabhanga 3.27 inches, Kissengunge 3.10 inches, Cooch Behar 2.28 inches, Kurigram 1.63 inches, Arrareah 1.49 inches, and Chupra 1.25 inches.

METEOROLOGICAL OFFICE, BENGAL,
The 25th September 1883.

ALEXANDER PEDIER, F.C.S.,
Offg. Meteorological Reporter to the Govt. Bengal.

MEMORANDA.

THE principal features in the vital statistics of the first class Municipalities in Bengal for the week ending 8th September 1883, as indicated in the annexed table, are—

(1). That births and deaths were recorded in these Municipalities in the proportions per 1,000 of their population of 22.1 and 28.1, respectively, as opposed to 23 and 31.6 per 1,000 respectively, in the preceding week ending 1st September, indicating a reduction in the registration of both events, particularly of deaths.

(2). That the highest birth and death-rates were recorded in the under-mentioned Municipalities :—

Births.			Deaths.		
		Ratio per mille.			Ratio per mille.
Arrah ..	..	40.7	Uterpara ..	..	75.5
Comillah ..	..	38.5	Burdwan ..	..	53.4
Uterpara ..	..	37.7	Bhagulpore ..	..	44.4
Gya ..	..	36.9	Gya ..	..	41.7
Bhagulpore ..	..	35.3	Serampore ..	..	37.3
Patna ..	..	34.1	Chuprah ..	..	35.2
Chuprah ..	..	33.2	Patna ..	..	33.1
Durbhanga ..	..	31.5	Poori ..	..	32.1
			Rampore Beaulah ..	..	31.5
			Durbhanga ..	..	30.7
			Santipore ..	..	28.0
			Monghyr ..	..	26.2
			Suburbs of Calcutta ..	..	25.6
			Hughli ..	..	25.5

(3). That the mean mortality from the principal death-causes stands as follows, in comparison with the mortality during the preceding week from the same causes :—

			Ratio per mille during the weeks ending—	
			8th September.	1st September.
Cholera ..	..	..	1.6	2.6
Small-pox ..	..	..	.03	.03
Fever ..	..	..	14.8	14.9
Bowel-complaints ..	..	..	4.3	5.1
Injury ..	..	..	.5	.6
Other causes ..	..	..	6.9	8.4

exhibiting a decline in fatal results from cholera, bowel-complaints and the diseases recorded under the head of "Other causes," and no variation in the casualty rate from the other specified diseases.

(4). That while small-pox continued, as in the preceding week, to prevail only in the Bhagulpore town, cholera, fever, bowel-complaints, and the diseases classed under the head of "Other causes" proved conspicuously fatal in the under-mentioned Municipalities :—

Cholera.		Fever.		Bowel-complaints.		Other Causes.	
	Ratio per mille.		Ratio per mille.		Ratio per mille.		Ratio per mille.
Uterpara ..	18.9	Burdwan ..	38.1	Uterpara ..	18.9	Uterpara ..	28.3
Bhagulpore ..	10.9	Santipore ..	28.0	Monghyr ..	9.1	Poori ..	25.7
Serampore ..	9.8	Rampore Beaulah ..	23.6	Chuprah ..	8.8	Bhagulpore ..	13.6
Gya ..	4.8	Durbhanga ..	23.6	Hughli ..	8.1	Burdwan ..	10.7
Monghyr ..	4.5	Gya ..	22.5			Serampore ..	9.8
						Gya ..	9.6

(5). That the mortality referable to Sex, Class and Age stands as follows :—

According to Sex.			According to Class.			According to Age.		
		Ratio per mille.			Ratio per mille.			Ratio per mille.
Males ..	..	30.4	Christians ..	..	33.0	Under 1 year ..	..	261.4
Females ..	..	26.0	Hindus ..	..	28.8	1 and under 5 years ..	..	39.7
			Mahomedans ..	..	26.6	5 and under 10 ..	..	19.0
			Other classes ..	..	36.4	10 and under 15 ..	..	14.0
						15 and under 20 ..	..	19.9
						20 and under 30 ..	..	15.8
						30 and under 40 ..	..	18.3
						40 and under 50 ..	..	21.5
						50 and under 60 ..	..	22.7
						60 years and upwards ..	..	60.1

F. W. A. DEFABECK,

The 24th September 1883.

Officiating Sanitary Commissioner for Bengal.

MORTALITY ACCORDING TO -

Disease.

BIRTHS.

POPULATION.

Sex.

NAMES OF MUNICIPALITIES.

DISTRICTS.	NAMES OF MUNICIPALITIES.	NUMBER.			RATIO PER 1,000 OF POPULATION PER ANNUM.			DEATHS FROM—			RATIO PER 1,000 OF POPULATION PER ANNUM.							COMPARISON WITH PREVIOUS PERIODS.		DEATHS.		RATIO PER 1,000 OF POPULATION PER ANNUM.		Ratio of male deaths to every 100 female deaths.		
		Males.	Females.	Total.	Males.	Females.	Total.	Ratio of male births to every 100 female births.	Small-pox.	Cholera.	All causes.	Injury.	Other diseases.	All causes.	Ratio of deaths per 1,000 of population in the previous year.	Ratio of deaths per 1,000 of population in the current year.	Males.	Females.	Males.	Females.						
Burdwan	Burdwan	18,665	16,017	34,682	9	7	16	15.7	10.7	24.6	128	1	...	...	...	...	...	...	...	...	23	12	65.2	37.0	191	
Midnapur	Midnapur	16,927	16,633	33,560	4	2	6	6.2	3.1	9.3	290	...	...	...	...	...	...	...	...	...	...	5	2	15.4	6.3	230
Hughli	Hughli and Chinsurah	19,179	10,439	29,618	5	5	10	6.7	6.7	13.4	100	...	...	...	...	...	...	...	...	...	...	9	10	34.4	25.6	90
Serampore	Serampore	13,559	12,857	26,416	8	7	15	11.8	13.7	25.5	83	5	...	...	...	...	...	...	...	...	...	10	9	38.4	30.2	111
Uttara	Uttara	2,046	2,444	4,490	3	1	4	28.3	9.4	37.7	300	2	...	...	...	...	...	...	...	...	...	6	3	102.4	45.2	300
Howrah	Howrah	60,889	44,639	105,528	21	14	35	10.3	6.9	17.2	150	4	...	...	...	...	...	...	...	...	...	25	19	21.3	22.1	131
Suburbs of Calcutta	Suburbs of Calcutta	147,306	104,254	251,560	34	39	73	7.0	8.1	15.1	87	3	...	...	...	...	...	...	...	...	...	70	64	24.7	20.9	125
Keshpur	Keshpur	19,413	22,169	41,582	4	3	7	5.0	3.8	8.8	133	...	...	...	...	...	...	...	...	...	...	11	7	29.8	16.4	157
Bangabati	Bangabati	4,026	4,653	8,679	1	1	2	6.0	6.0	12.0	160	...	...	...	...	...	...	...	...	...	...	1	1	12.9	11.3	100
Sanipore	Sanipore	11,559	12,544	24,103	4	3	7	8.6	6.6	15.1	133	...	...	...	...	...	...	...	...	...	...	7	6	31.4	24.9	116
Jessore	Jessore	4,380	3,665	8,045	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	33.3	...	No female deaths.
Rampore Beaulah	Rampore Beaulah	10,766	9,055	19,821	1	2	3	5.6	6.3	7.9	50	...	...	...	...	...	...	...	...	...	...	7	5	33.8	23.3	140
Darjiling	Darjiling	4,579	2,429	7,008	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	No male deaths.
Dacca	Dacca	42,782	37,579	80,361	20	9	29	15.0	5.8	18.8	222	...	...	...	...	...	...	...	...	...	...	...	...	...	...	176
Narainpur	Narainpur	7,005	4,956	11,961	2	...	2	8.3	...	8.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	390
Chittagong	Chittagong	13,540	8,700	22,240	3	4	7	7.0	9.4	16.4	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40
Comilla	Comilla	8,135	5,333	13,468	3	7	10	11.6	39.9	38.5	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	360
Patna City	Patna City	78,762	61,478	140,240	37	46	83	18.5	15.6	34.1	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	157
Gya	Gya	38,270	37,431	75,701	32	22	54	21.9	15.0	36.9	145	7	...	...	...	...	...	...	...	...	...	...	...	...	...	144
Arrah	Arrah	29,199	22,505	51,704	16	18	34	10.2	21.5	49.7	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	98
Muzaffarpore	Muzaffarpore	23,064	16,658	39,722	2	5	7	2.4	6.1	6.5	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100
Durban	Durban	38,774	32,322	71,096	23	17	40	18.1	13.4	31.5	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	85
Chupral	Chupral	25,014	27,203	52,217	22	12	34	21.6	11.7	33.3	183	2	...	...	...	...	...	...	...	...	...	...	...	...	...	125
Biagapore	Biagapore	29,640	27,813	57,453	19	20	39	17.2	18.1	35.3	95	12	...	...	...	...	...	...	...	...	...	...	...	...	...	153
Monghyr	Monghyr	24,151	29,368	53,519	10	9	19	9.1	11.1	17.2	111	5	...	...	...	...	...	...	...	...	...	...	...	...	...	83
Purneah	Purneah	8,663	8,553	17,216	2	2	4	6.9	6.9	13.8	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	75
Poori	Poori	15,027	11,265	26,292	2	4	6	4.3	4.3	12.6	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	260
Total	Total	788,251	627,429	1,415,680	263	261	524	11.9	10.2	22.1	110	41	1	375	110	13	177	750	1.6	0.9	29.1	31.3	30.4	26.0	131	

		13		14		15		16		MORTALITY ACCORDING TO—																							
										Age.																							
DISTRICTS.	NAMES OF MUNICIPALITIES.	DEATHS AMONG—						RATIO PER 1,000 OF POPULATION PER ANNUM.						DEATHS.										RATIO PER 1,000 OF POPULATION PER ANNUM.									
		DEATHS AMONG—						RATIO PER 1,000 OF POPULATION PER ANNUM.						DEATHS.										RATIO PER 1,000 OF POPULATION PER ANNUM.									
		DEATHS AMONG—						RATIO PER 1,000 OF POPULATION PER ANNUM.						DEATHS.										RATIO PER 1,000 OF POPULATION PER ANNUM.									
		DEATHS AMONG—						RATIO PER 1,000 OF POPULATION PER ANNUM.						DEATHS.										RATIO PER 1,000 OF POPULATION PER ANNUM.									
Christians.	Hindus.	Mahomedans.	Buddhists.	Other classes.	Under 1 year.	1 and under 5 years.	5 and under 10 years.	10 and under 15 years.	15 and under 20 years.	20 and under 30 years.	30 and under 40 years.	40 and under 50 years.	50 and under 60 years.	60 and upwards.	Under 1 year.	1 and under 5 years.	5 and under 10 years.	10 and under 15 years.	15 and under 20 years.	20 and under 30 years.	30 and under 40 years.	40 and under 50 years.	50 and under 60 years.	60 and upwards.									
Burdwan	Burdwan	23	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Midnapur	Midnapur	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hughli	Hughli and Chinsurah	16	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saranpore	Saranpore	16	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Howrah	Howrah	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24-Pegunahs	Salt nbs of Calcutta	34	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nuddan	Kidnapur	80	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jessore	Rampore Beaulah	10	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjiling	Darjiling	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dacca	Dacca	11	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chittagong	Chittagong	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tripurah	Tripurah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Patna	Patna City	79	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gya	Gya	81	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahabad	Arrah	11	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muzafferpore	Muzafferpore	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Durban	Durban	27	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saran	Chuprah	20	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahpore	Shahpore	41	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Monghyr	Monghyr	34	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Purneah	Purneah	5	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poori	Poori	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	Total	7	512	220	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Results of the Meteorological Observations taken at the Alipore Observatory from 16th to 22nd September 1883.

Mo. & d.	Date.	Maximum in sun.	Number of hours of bright sunshine.	Mean pressure barometer at 32° Fahr.	TEMPERATURE.				HYGROMETRY.				WIND.		Miles recorded.	Rain.	WEATHER.
					Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Prevailing direction.				
1883.				Inches.						Inches.		%				Inches.	
Sept.	16th	149.0	1.0	29.695	83.6	87.6	7.0	81.0	80.9	1.020	79.8	89	SSW and S	...	84	Nil.	Chiefly cloudy, o
"	17th	151.5	9.0	724	84.3	89.2	10.0	79.2	80.8	1.008	79.5	86	S and S by W	...	99	...	Partially cloudy, t.
"	18th	159.3	6.8	729	83.0	89.5	10.3	79.2	80.6	1.004	79.3	87	S by W, S and SSW	...	80	0.01	Chiefly cloudy, o g, t, d,
"	19th	156.6	7.0	703	83.6	88.5	9.8	78.7	80.2	0.986	78.8	86	S by W, S and SW	...	68	Nil.	Chiefly cloudy, o.
"	20th	167.2	9.2	698	84.3	89.5	10.3	79.2	80.2	.970	78.6	84	SW, S, and SW by W	...	92	...	Partially cloudy.
"	21st	150.5	9.6	743	83.2	89.2	11.1	78.1	79.1	.941	77.4	83	S and SSW	...	78	0.35	Partially cloudy, p.
"	22nd	153.8	8.8	729	82.5	89.5	10.5	79.0	79.9	.975	78.5	85	SW	...	79	Nil.	Partially cloudy.

The mean pressure of the seven days	...	Inches.	29.717
The average pressure of the corresponding period for 24 years, S. G.'s Office	...	...	29.685
The total number of hours of bright sunshine of the seven days	...	Hours.	49.8
		⊖	
The mean temperature of the seven days	...	...	83.7
The average temperature of the corresponding period for 24 years, S. G.'s Office	...	...	83.1
The extreme variation of temperature during the seven days	...	...	11.4
The maximum temperature during the seven days	...	...	89.5
		Miles.	
The highest velocity of the wind in one hour during the seven days	...	...	10
		lbs.	
The highest pressure of the wind on one square foot during the seven days	...	...	Not measureable.
		%	
The mean relative humidity during the seven days	...	...	86
The average relative humidity of the corresponding period for 24 years, S. G.'s Office	...	...	86
		Inches.	
The total fall of rain from 16th to 22nd September 1883	...	...	0.36
The average fall of the corresponding period for 24 years, S. G.'s Office	...	...	2.62
The total fall from 1st January to 22nd September 1883	...	...	46.07
The average fall of the corresponding period for 24 years, S. G.'s Office	...	...	56.76
The mean pressure, temperature, &c., are deduced from the traces of the Barograph and Thermograph, and from observations made at 6h, 10h, 16h, and 22h.			

The maximum and minimum temperatures are obtained from self-registering thermometers. All the thermometers are verified and the readings have been corrected to a standard constructed and verified at the Kew Observatory. They are exposed under a thatched shed open at the sides, and are suspended four feet above the ground.

The barometer readings are corrected approximately to those of the standard Newmann's No 86 formerly at the Surveyor-General's Office.

The hygrometric elements are obtained from Tables III, IV and V of the official tables computed in the Meteorological office, and based on Regnault's modifications of August's formula.

The direction of the movement of the wind are taken from the trace of a Beckley's anemograph.

The mouth of the rain-gauge is one foot above the ground.

o overcast, g gloomy, t thunder, d drizzling rain, p passing temporary showers.

ALEXANDER PEDLER,

METEOROLOGICAL OFFICE, INDIA,
The 24th September 1883.

For Meteorological Reporter to the Government of India.

**Results of the Thermometrical Observations taken at the Meteorological Office,
Chowringhee, from 16th to 22nd September 1883.**

MONTH.	Date.	TEMPERATURE.				HYGROMETRY.				Rain.
		Mean.	Maximum.	Range.	Minimum.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	
1883.		°	°	°	°	°	Inches.	°	%	Inches.
September	16th	83.5	87.8	7.0	80.8	80.6	1.006	79.4	87	Nil
"	17th	84.5	91.4	11.8	79.6	81.2	1.022	79.9	86	"
"	18th	84.1	90.2	10.4	79.8	81.0	1.018	78.8	87	0.06
"	19th	83.2	89.8	10.2	79.6	80.0	.982	78.7	86	0.19
"	20th	83.7	90.7	11.7	79.0	80.2	.985	78.8	85	Nil
"	21st	83.1	91.0	12.2	78.8	80.1	.988	78.9	87	0.04
"	22nd	84.2	91.4	11.8	79.6	81.2	1.026	80.0	87	Nil

The mean temperature of the seven days ... 83.8

The extreme variation of temperature during the seven days ... 12.6

The maximum temperature during the seven days ... 91.4

The mean relative humidity during the seven days ... 86

Inches.

The total fall of rain from 16th to 22nd September 1883 ... 0.29

The mean temperature and humidity are obtained by applying to the mean of the 10h, 16h, and minimum readings a correction dependent on the range, and derived from the hourly observations at the Surveyor-General's Office, Chowringhee, in past years.

METEOROLOGICAL OFFICE, INDIA,

The 24th September 1883.

ALEXANDER PEDLER,

For Meteorological Reporter to the Govt. of India.

Statement of Fluctuations of Goods Traffic on the Northern Bengal State Railway for the month of August 1883.

Abstract of the principal commodities carried over the Line during the month of August 1883, as compared with the same month of the previous year.

STAPLES.	1882.		1883.		Total in 1882.	Total in 1883.	Increase.	Decrease.
	Up.	Down.	Up.	Down.				
Ale	Tons. 62'97	Tons. 25'25	Tons. 25'16	.....	Tons. 55'22	Tons. 25'16	.....	Tons. 28'06
Food-grain	1174'87	1215'76	1818'21	1838'44	2388'08	3142'05	754'02	.....
Ginger	.....	36'80	1'02	21'01	36'86	22'03	.....	14'83
Gunny-bags	19'65	379'09	5'99	529'32	308'74	534'31	135'57	.....
Jute	7'82	3523'64	0'42	1387'12	3531'90	1333'55	.....	2137'82
Piece-goods	673'55	.....	223'14	30'49	673'55	253'63	.....	419'92
Railway material	2102'32	100'62	3032'15	131'90	2252'84	3108'61	910'97	.....
Salt	5240'23	.....	1318'84	77	5240'23	1319'61	.....	3920'62
Sugar	81'15	.....	62'13	.....	81'15	52'13	.....	29'02
Tea	.....	741'36	.....	861'83	741'36	861'83	120'47	.....
Tobacco	14'05	1072'19	0'00	1768'66	1087'14	1774'72	687'58	.....
Other goods	668'00	270'20	1018'02	225'86	1298'86	1244'42	5'42	.....
Total	10303'17	7347'80	7508'74	6270'16	17720'97	13787'90	.....	.....

GENERAL REMARKS AND EXPLANATIONS.

THE most notable feature in the traffic of the month is the heavy decrease in the despatches of jute, which at this period of the year is our main staple of traffic. The probable reason of this falling off is explained below.

From careful enquiries made from reliable traders in the Rungpore, Dinagopore, and Julpaiguri districts, it has been ascertained that this season's jute crop is estimated at six annas under that of last year, with the additional drawback of its being a late crop. It is, therefore, to be feared that this season's traffic will not equal that of last year.

Besides this loss to our traffic, decreases have taken place in Piece-goods, Salt, and Sugar. The total decrease in the month's traffic amounts to 4042'07 tons.

INCREASES.

Food-grain Tons 754'02
This increase is mainly in upwards traffic, which is due to a demand from the hill districts. Prices in the Calcutta market remain unchanged, with only a moderate demand.

Gunny-bags Tons 135'57
Though there has been but little demand for this article, the low freight at which it is carried enables despatchers to transact business.

Railway material Tons 910'97
The total quantity of railway material carried during the month was 3163'81 tons, of which 2764'91 tons was coal for the Locomotive Department. The balance is made up of materials for the Dinagopore extension.

Tea Tons 120'47
Very large sales of tea have taken place at Calcutta during the month at favourable prices, and hence there has been a desire on the part of consignors to sell.

Tobacco Tons 687'58
This increase will make up for the slack despatches in the beginning of the season, and is due to a brisk demand for export to Burmah.

All other goods Tons 5'62
This is not worth noticing.

DECREASES.

Ale Tons 28'06
The decrease under this head is in a great measure due to a falling off of public consignments.

Ginger Tons 14'86
There is no demand for this article.

Jute Tons 2137'82
Though the prices for both old and new jute have considerably advanced in Calcutta during the month, a large decrease has taken place owing, it is said, to despatchers being unable to procure the stuff in sufficient quantities or of proper quality. Universal complaints are made of the lateness of the season, of the shortness of the crop, and of the inferior quality of the stuff offered for sale.

Piece-goods Tons 419'92
The general tone of the market for piece-goods has become one of marked depression, which, it is hoped, will be improved by an enquiry during September for Poojah requirements.

Salt Tons 3920'62
It has been ascertained that this traffic is chiefly regulated by the traffic in jute. The majority of jute traders receive, in return for jute consignments, consignments of salt. The decrease of 2137'82 tons in the despatches of jute downwards will explain the above falling off in salt upwards.

Sugar Tons 29'02
The reduced rate for this commodity introduced from 1st July 1883 does not appear to be having an appreciable effect on this traffic.

TRAFFIC SUPERINTENDENT'S OFFICE; Saidpur, the 12th September 1883.

G. S. LEONARD, Traffic Superintendent.

Report of Fluctuation of Traffic on the Tirhoot State Railway for the month of August 1883.

Statement showing Increases and Decreases in Maundage of principal Staples carried over the Line during the month of August 1883, as compared with the corresponding period of 1882.

STAPLES.	1883.		1882.		Total.		Increase.	Decrease.
	Up.	Down.	Up.	Down.	1883.	1882.		
Coal	Mds. 10,381	Mds. 58,702	Mds. 10,381	Mds. 58,702	Mds. 10,381	Mds. 58,702		
Food-grains	6,708	57,336	16,303	21,040	64,136	35,344	6,788	
Ghee	20	1,935		1,870	1,935	1,870		815
Gunny-bags (empty)	3,337	352	2,360	365	3,080	2,716	964	
Hides and horns	00	3,607	10	2,244	3,033	2,254	1,679	
Indigo		5		20	5	20		15
Iron	1,267	209	5,374	539	1,466	5,913		4,447
Lime and kunker	22,003		16,143	334	22,003	16,377	6,526	
Piece-goods	6,276	7	3,006		6,283	3,006	2,317	
Railway materials	58,470	6,850	35,703	1,443	65,320	37,206	28,123	
Salt	42,085	4,493	22,287	1,800	44,578	24,087	21,891	
Saltpetre	817	9,562	824	9,567	10,379	10,701		412
Seeds	303	96,170	1,748	1,64,631	96,433	1,66,110		69,637
Tobacco	496	12,244	203	9,397	12,740	10,250	2,490	
All other goods	24,583	11,417	16,054	30,490	35,390	46,544		10,545
Total	1,77,791	1,23,547	1,78,435	2,44,036	3,61,338	4,23,063	72,725	1,34,492
						3,07,338		72,725
Decrease						61,724		61,724

W. SEDGWICK, Major, R.E.,

Acting Manager.

W. E. HARTT,

Traffic Superintendent.

GENERAL REMARKS AND EXPLANATIONS.

The total quantities of goods carried during the month of August 1883 aggregated maunds 3,61,338, as compared with maunds 4,23,062 carried during the corresponding period of 1882, and maunds 2,77,849 carried during the previous month, showing a decrease of maunds 61,724, and an increase of maunds 83,489 respectively.

Of the several increases and decreases, the following are the most prominent ones and worthy of special explanation:—

INCREASES.

Food-grains ... Mds. 6,788
The increase is due to the extension of the line to Motihari and Jhanjharpur, the chief part being from Jhanjharpur section.

Hides and horns ... Mds. 1,679
The increase under this head is due to the extension of the line to Motihari, and to the demand in the Calcutta market.

Piece-goods ... Mds. 2,317
The increase is due to the extension of the line to Motihari.

Salt ... Mds. 21,891
About half of this was booked to the stations on the eastern and western extensions, and the other half is an increase on the traffic to stations on the old line.

Tobacco ... Mds. 2,490
The increase is partly due to the Bachawi road having been rendered impassable by floods, which prevented tobacco being brought to Durbhunga as quickly as last year; and partly to removal of the line to Semuriah Ghât, which necessitated the opening of a station at Begum Serai.

Lime and kunker ... Mds. 6,526
This is chiefly due to the line being worked up to Mozufferpore for the Hujespore extension, and to kunker sent from Bilaspur and Durbhunga for road work.

Railway materials ... Mds. 28,123
The increase is due to stone posts for fencing the western extension, and to rails for the Hujespore extension having been despatched during the month.

DECREASES.

Coal ... Mds. 4,821
This is due to contractors and indigo-planters having got up all the coal they required for the season.

Iron ... Mds. 4,447
This is accounted for by there not having been any consignments of machinery for indigo factories imported during the month, while a large number were carried last year in the corresponding month.

Seeds ... Mds. 69,637
The decrease under this head is partly due to the inability of the Railway to carry the traffic, owing to paucity of rolling-stock and limited demand during the first half of the month in Calcutta.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY.

Approximate Return of Traffic for week ended 15th September 1883, on 1,500 miles open.

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated).	Total earnings.	TOTAL TRAIN-MILES RUN.		
	Number of Passengers.	Coaching receipts.	Weight carried.	Receipts.			Coaching.	Merchandise.	Total.
		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week...	214,564	2,33,144 15 0	24,85,082 30	6,40,160 0 4	18,063 3 2	8,97,414 11 6	60,647	139,223	199,871
Or per mile of railway	143	154 8 8	165 4 4	428 3 4	11 15 0	594 11 6			
For previous 10 weeks of half-year	1,902,412	10,38,871 13 0	2,32,01,918 10	63,10,423 10 2	1,71,487 0 4	86,20,782 7 6	616,162	1,393,833	2,010,035
Total for 11 weeks	2,116,976	21,72,050 12 0	2,57,40,998 0	71,82,530 3 6	1,80,550 3 6	95,24,197 3 9	676,830	1,524,076	2,200,906
COMPARISON.									
Total for corresponding week of previous year	169,300	1,80,301 14 3	19,34,076 30	4,65,705 8 8	17,872 12 8	6,63,940 3 7	51,546	99,470	151,116
Per mile of railway corresponding week of previous year	113	119 10 7	128 4 4	309 1 11	11 13 10	440 10 4			
Total to corresponding date of previous year	1,875,738	22,42,887 0 0	2,31,70,145 0	68,90,160 12 3	2,17,109 8 4	83,59,165 15 7	601,342	1,228,500	1,829,851

Approximate statement of gross receipts of the East Indian Railway.

RECEIPTS FOR WEEK ENDED 10TH SEPTEMBER 1883.			RECEIPTS FOR WEEK ENDED 15TH SEPTEMBER 1883.			TOTAL RECEIPTS FROM 1ST APRIL 1882 TO 10TH SEPTEMBER 1883.			TOTAL RECEIPTS FROM 1ST APRIL 1883 TO 15TH SEPTEMBER 1883.			Total increase in 1883.	Total decrease in 1883.
Mean mile worked.	Receipts.	Per mile worked.	Mean mile worked.	Receipts.	Per mile worked.	Mean mile worked.	Total receipts.	Per mile worked.	Mean mile worked.	Total receipts.	Per mile worked.		
	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		
1,500	6,63,940	441	1,800	8,97,415	595	1,506	1,90,51,231	13,241	1,509	2,96,06,331	19,644	26,65,100	

EASTERN BENGAL RAILWAY COMPANY.

Approximate Return of Traffic for week ended 8th September 1883, on 206½ miles open.

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated).	Total earnings.	TOTAL TRAIN-MILES RUN.		
	Number of passengers.	Coaching receipts.	Weight carried.	Receipts.			Coaching.	Merchandise.	Total.
		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week...	46,799	28,044 0 0	2,40,036 0	62,443 0 0	2,671 0 0	93,758 0 0	8,218	7,546	15,764
Or per mile of railway	226	138 8 8	1,204 21	302 0 4	12 14 9	453 7 9			
For previous 10 weeks of half-year	467,391	2,48,702 0 0	18,86,087 0	3,83,321 0 0	7,684 0 0	6,30,717 0 0	70,105	58,076	128,181
Total for 10 weeks	514,190	2,77,346 0 0	21,34,723 0	4,50,704 0 0	8,365 0 0	7,38,475 0 0	78,320	65,622	143,942
COMPARISON.									
Total for corresponding week of previous year	35,583	23,602 0 0	4,02,217 0	1,41,595 0 0	302 0 0	1,65,499 0 0	5,997	14,428	20,385
Per mile of railway corresponding week of previous year	207	157 6 9	2,341 34	824 6 9	1 12 2	983 9 8			
Total to corresponding date of previous year	428,683	2,44,023 0 0	31,73,274 0	9,06,902 0 0	6,713 0 0	11,57,727 0 0	60,401	105,133	165,534

Includes Rs. 148 on account of Revenue stores.

EASTERN BENGAL RAILWAY COMPANY.

Miles open. Total.

Bengal Central Railway Approximate Return of Traffic for week ended 8th September 1883. { Ranaghat Section 20½ } 85
{ Dum-Dum " 1½ }

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated).	Total earnings.	TOTAL TRAIN-MILES RUN.		
	Number of passengers.	Coaching receipts.	Weight carried.	Receipts.			Coaching.	Merchandise.	Total.
		Rs. A. P.	Mds. s.	Rs. A. P.	Rs. A. P.	Rs. A. P.			
Total traffic for the week—									
Ranaghat Section	2,203	646 0 0	7,989 0	266 0 0	7 0 0	921 0 0	330	261	591
Dum-Dum do.	6,292	815 0 0	2,051 0	36 0 0	10 0 0	861 0 0	618	9	627
Or per mile of railway—									
Ranaghat Section	106	81 3 8	385 0	13 13 1	0 3 5	44 6 3			
Dum-Dum do.	443	57 5 1	144 0	2 8 8	0 11 3	60 6 9			
For previous 10 weeks of half-year—									
Ranaghat Section	22,063	6,166 0 0	1,21,366 0	2,277 0 0	61 0 0	8,504 0 0	2,540	2,679	5,219
Dum-Dum do.	69,045	7,024 0 0	22,740 0	140 0 0	80 0 0	7,254 0 0	5,355	290	5,645
Total for 10 weeks—									
Ranaghat Section	24,266	6,814 0 0	1,22,293 0	2,543 0 0	68 0 0	9,425 0 0	2,980	2,969	5,949
Dum-Dum do.	65,840	7,839 0 0	24,791 0	176 0 0	100 0 0	8,115 0 0	5,973	299	6,272
Total of both Sections	89,598	14,653 0 0	1,54,084 0	2,719 0 0	168 0 0	17,540 0 0	8,953	3,268	12,221

PATNA AND GYA STATE RAILWAY.

Approximate Return of Traffic for week ended 1st September 1883, on 57½ miles open.

	COACHING TRAFFIC.		MERCHANDISE AND MINERAL TRAFFIC.		Other earnings (estimated).	Total earnings.	TRAFFIC TRAIN-MILES RUN.		
	Number of passengers.	Coaching receipts.	Weight Carried.	Receipts.			Coaching.	Merchandise.	Total.
Total traffic for the week ...	8,040	Rs. A. P. 3,194 8 0	Mds. c. 19,986 10	Rs. A. P. 1,876 11 0	Rs. A. P. 57 0 0	Rs. A. P. 5,128 3 0	1,869	525	2,394
Or per mile of railway ...	141	55 13 7	349 20	32 12 11	0 15 11	89 10 5	...	...	...
For previous 6 weeks of half-year ...	64,754	31,070 1 0	1,83,985 0	13,287 2 0	479 6 0	44,827 9 0	14,160	4,992	19,152
Total for 9 weeks ...	72,774	34,264 9 0	2,02,921 10	15,163 13 0	527 6 0	49,955 12 0	16,020	5,517	21,546
COMPARISON.									
Total for corresponding week of previous year ...	*8,083	*4,464 8 0	*16,939 0	*2,095 10 0	*165 14 6	*10,726 0 6	*1,093	*1,414	*2,516
Per mile of railway corresponding week of previous year ...	132	75 5 2	332 0	36 12 3	2 14 7	116 0 0	...	...	...
Total to corresponding date of previous year ...	70,454	36,179 4 6	2,15,516 0	23,547 15 0	675 18 2	61,493 0 8	13,901	13,869	27,770

* Represents approximate figures, as audited figures are not obtainable.

† Represents audited figures of the corresponding week of previous year.

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

Latest return received.	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1883.	Total decrease in 1883.	Percentage of increase or decrease.
			5th August 1882.	4th August 1883.	To 5th August 1882.	To 4th August 1883.			
1883.		Miles.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.
18th August ...	Northern Bengal	230	36,277 0 0	37,601 0 0	11,54,422 0 0	13,62,250 0 0	2,67,828 0 0	...	18
18th Do. ...	Tirhoot	166	10,316 0 0	14,893 0 0	3,95,569 0 0	4,91,988 0 0	93,419 0 0	...	23
18th Do. ...	Calcutta and South-Eastern.	56	2,707 0 0	4,384 0 0	1,14,183 0 0	1,84,764 0 0	70,581 0 0	...	62
18th Do. ...	Nalhati	27½	1,119 0 0	1,483 0 0	42,748 0 0	50,398 0 0	7,650 0 0	...	18
	Total	479½	49,319 0 0	59,351 0 0	17,09,922 0 0	20,89,400 0 0	3,79,478 0 0	...	22

BENGAL PROVINCIAL RAILWAYS.

Weekly Statement of Traffic Receipts.

Latest return received.	Name of Railway.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1ST JANUARY		Total increase in 1883.	Total decrease in 1883.	Percentage of increase.
			12th August 1882.	11th August 1883.	To 12th August 1882.	To 11th August 1883.			
1883.		Miles.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.
8th August ...	Northern Bengal	230	55,189 0 0	34,992 0 0	11,89,911 0 0	13,93,242 0 0	2,63,631 0 0	...	+17
18th Do. ...	Tirhoot	166	10,392 0 0	15,105 0 0	4,09,441 0 0	6,07,093 0 0	97,652 0 0	...	+24
8th Do. ...	Calcutta and South-Eastern.	56	2,523 0 0	4,213 0 0	1,16,106 0 0	1,89,977 0 0	72,271 0 0	...	+62
18th Do. ...	Nalhati	27½	1,116 0 0	1,465 0 0	43,864 0 0	51,863 0 0	7,999 0 0	...	18
	Total	479½	49,720 0 0	51,775 0 0	17,59,322 0 0	21,41,175 0 0	3,81,553 0 0	...	31

DARJEELING-HIMALAYAN RAILWAY COMPANY, LIMITED.

Weekly Statement of Traffic Receipts.

The latest return received.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1st JULY		Total increase in 1883.	Total decrease in 1883.	Percentage of increase or decrease.
		19th August 1882.	18th August 1883.	To 19th August 1882.	To 18th August 1883.			
21st September 1883 ...	50	Rs. A. P. 3,992 1 3	Rs. A. P. 5,349 4 3	Rs. A. P. 25,505 14 3	Rs. A. P. 34,712 10 2	Rs. A. P. 19,206 11 11	Rs. A. P. ...	+54%

Calcutta, the 21st September 1883.

GILLANDERS, ARBUTHNOT & Co., Agents.

DARJEELING-HIMALAYAN RAILWAY COMPANY, LIMITED.

Weekly Statement of Traffic Receipts.

The latest return received.	Length open.	RECEIPTS FOR WEEK ENDING		TOTAL RECEIPTS FROM 1st JULY		Total increase in 1883.	Total decrease in 1883.	Percentage of increase or decrease.
		26th August 1882.	25th August 1883.	To 26th August 1882.	To 25th August 1883.			
24th September 1883 ...	50	Rs. A. P. 7,679 10 0	Rs. A. P. 7,167 4 3	Rs. A. P. 43,085 8 8	Rs. A. P. 61,879 14 5	Rs. A. P. 18,794 6 2	Rs. A. P. ...	+43%

Calcutta, the 24th September 1883.

GILLANDERS, ARBUTHNOT & Co., Agents.



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, OCTOBER 3, 1883.

OFFICIAL PAPERS.

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RESOLUTION ON THE GENERAL ADMINISTRATION REPORT OF THE COMMISSIONER OF THE BHAGULPORE DIVISION AND SONTAL PERGUNNAHS FOR THE YEAR 1882-83.

GENERAL DEPARTMENT,—MISCELLANEOUS.

Calcutta, the 29th September 1883.

RESOLUTION.

READ—

The General Report of the Commissioner of the Bhagulpore Division and Sonthal Pergunnahs for the year 1882-83.

For the first half of the year Mr. Metcalfe officiated as Commissioner of the Division. Mr. Barlow, by whom the report is submitted, resumed charge on the 1st November.

2. *Tours.*—Messrs. Metcalfe and Barlow spent between them 106 days in the interior of the division, and the example thus set was on the whole well followed by their subordinates. The Collector of Bhagulpore, however, made a tour short by six days of the minimum required by the Government, and the Collector of Monghyr only just came up to the prescribed standard. The Commissioner notices that both these districts were imperfectly inspected. It must be borne in mind that it is the duty of all district officers thoroughly to inspect their charges, whatever number of days may be required for the purpose, and that any officer who does not do this fails in his duty, even though the actual number of days spent away from head-quarters may exceed the low standard enjoined by the Government. The completeness of the tours made by the Collectors of Purneah, Maldah and the Sonthal Pergunnahs

is noticed by the Commissioner. The tours of the Sub-Divisional Officers, especially of those of the Sonthal Pergunnahs, were very full. As an example of good, useful work done, the following extract from the report of the Joint-Magistrate of Deoghur is cited:—

"An important feature of my tour was the attention given to the improvement of the estates under the charge of the Court of Wards. Mr. Oldham had been able to promise funds, and I had to arrange for their expenditure. During the year some improvements were carried out, and others were planned and are now being made. A new plough—the *Kaiser* plough—was introduced. A depôt for the sale of the Beheea sugarcane mills was established at the cutcherry, and 90 of them were sold. Higher primary schools were arranged for at Madhupur and Sarawan. At Madhupur the help promised by the Court of Wards has called forth a hearty response from the residents, and I hope the nucleus of a much-needed school has been formed. I also established a fresh *hât* at Burai, which has supplied a great want."

3. *Weather and crops.*—In every district of the division the rainfall was below that of previous years, but owing to its seasonable distribution, the crops suffered less from drought than might have been expected. The rice crop was generally rather below the average, but a heavy fall of rain in the cold weather benefited the *rubbee* crops. The absence of the usual inundations by the rivers in Purneah and Maldah was injurious to the rice of those districts, but was very favourable to indigo and jute; so much so, that planters are said to have become almost tired of cutting the former, while the latter became so cheap that cultivators being unable to realize any profit in some cases refused to strip the fibre from the stalks. In the western portions of the Sonthal Pergunnahs the season was normal, while in the centre of the same district the prevailing system of dam irrigation prevented loss from the unequal rainfall. In the east of the pergunnahs the crops were good. Generally speaking the yield of *bhadosi* was about ten annas in Monghyr, Bhagulpore and Purneah, and higher in Maldah and the Sonthal Pergunnahs; while the *aghani* varied from eight annas in Bhagulpore to twelve annas in Maldah. The *rubbee* crop was fair everywhere, except in the Bhagulpore district.

4. *Public health.*—The year generally was unhealthy. The only district which escaped an epidemic of fever was Bhagulpore, while the disease was particularly prevalent and very fatal in Purneah and Maldah. In the former of these districts the recorded mortality, presumably from fever alone, amounted to 23·32 per mille of the population. The Commissioner fears that a wave of fever is passing over the Sonthal Pergunnahs, and states that the Pakaur sub-division has been steadily becoming more unhealthy since 1879. The districts of Purneah, Maldah, and the Sonthal Pergunnahs were for the most part free from epidemic cholera, but Monghyr and Bhagulpore suffered severely. In the Monghyr thannas of Gogri, Beguserai, Kharakpur, and Tegra, the mortality which began to increase in March reached its climax in June. Subsequently the disease abated, but the total reported number of deaths was 5,347. In Bhagulpore 4,143 deaths were reported, the mortality being greatest in April. The division was free from small-pox and is now beginning to be fairly protected by vaccination, which, notwithstanding occasional opposition, is making progress.

5. *Material condition of the people.*—The comparatively inferior crops of the year are belied in the Bhagulpore district, at all events, to have checked improvement in the condition of the agricultural classes, though the higher prices which food-crops realized probably prevented any deterioration. The demand for labour was generally plentiful, and the condition of the labouring classes consequently satisfactory. The following account of the progress made in recent years in the Sonthal Pergunnahs is reproduced from the Deputy Commissioner's report.

"In my tours in the year, I observed everywhere the same signs of material improvement and of its maintenance among all classes of the people, with the sole exception of the fast-decaying Mal Paharia race, which I have commented on in previous reports. Two local and special causes have resulted in very observable material improvement. One is the forest conservancy, as pursued both by Government and by private proprietors, and its effects are most noticeable among the Sonthals. When wood was everywhere free to them, they were content to live in wretched wattle shanties, which could be repaired by thrusting in a few leafy boughs. The pig-stye was often the most permanent and carefully constructed erection in a Sonthal homestead. Such dwellings are being replaced by permanent and comfortable mud buildings. The Sonthals delight in finishing these carefully and neatly, in keeping them thoroughly well plastered and often decorated with colours, and the whole standard of

the homestead seems to be raised to be in keeping. For instance, however prosperous the householder, as long as he occupied a shanty, he and his womenkind were dressed in rags. They were well fed and looked strong and healthy, but were entirely careless of appearances. With a decent dwelling they adopt more decent dress.

"Another sign is the number of Sonthal plantations, not only of fruit-trees, but of acacia for fodder, fuel, and implements, round the borders of their homestead lands."

"The other local cause is the partial settlement of the Malers of the Rajmehal hills. The majority of this race occupy the hills rent-free, and free from any sort of assessment under the orders of Government in 1823. Since 1867-68 some 300 villages have come under assessment from causes which have been explained elsewhere. The beginning was made by their residents asking for a settlement. I recently visited many of these villages, and the contrast in their excellent material condition, between them and those which are still unassessed and unsettled, excited the spontaneous comments of the European gentlemen who were with me. The inhabitants of a settled area cease to be nomads in the hills, and while maintaining their community system, also hold clearly defined individual rights."

Other evidence points to the same conclusion that an area of prosperity has been introduced into the Sonthal Pergunnahs by the land settlement which has been concluded there. A survey and a record of rights have secured to the cultivators security of tenure at fair rents; and the experience thus gained in one portion of the country affords earnest of what may be expected from the extension of similar security throughout the rest of the Province under the Rent Law, which will ensure fixity of tenure and freedom from exorbitant demands.

6. *Emigration.*—The only feature of note in the history of the year under this head is the large increase from 673 to 2,289 in the number of emigrants for the tea districts recruited in the Sonthal Pergunnahs. The increase is attributed to the extended operations of garden sirdars deputed by their employers on the tea estates in Assam to recruit labourers. The garden sirdar system appears to the Commissioner the most satisfactory system known under the Act. A certain number of free emigrants are believed to have left the district of Monghyr, and this has also been the case in the Sonthal Pergunnahs, where it is reported that complaints from officers, missionaries and others regarding the acts of recruiters have been frequent. It is satisfactory to learn, however, that misconduct has in many cases been punished. Similar reports from the Chota Nagpore Division have been recently received, and the whole subject of emigration conducted by local agents is receiving the Lieutenant-Governor's attention. Copies of all papers on the subject will be forwarded to the Commissioner of the Bhagulpore Division for his information, and for such necessary action as they may indicate.

The clearances effected by Sonthals in Maldah continue to make progress.

7. *Prices of food and labour.*—The deficient crops coupled, it may be presumed, with the fact that stores of grain had been exhausted in the preceding year, led to a general rise in the price of food. The prices of labour remained unchanged.

8. *Manufactures.*—Indigo, though somewhat declining in importance, is still the principal industry in the division. Except, however, as regards the Purneah district, where the crop, as already noticed, was exceptionally good, the year was unfavourable for the industry. In Monghyr the outturn was average only, in Bhagulpore it suffered from rain, and in Maldah from drought. The condition of the silk industry remains unchanged, and the demand is, as elsewhere, said to be diminishing. The manufacture of weapons in Monghyr has almost died out, but that of padlocks and punches is springing up. The brass and bell-metal ware of Nawabgunge, in the Maldah district, seems to be almost the only product of the division for which there is any active demand. The actual or threatened extinction of these, and so many similar industries in which India once excelled, is a matter for great regret; and though in many cases, no doubt, Indian articles have been driven out of the market in favour of cheaper and sometimes better articles from Europe, it cannot be denied that large classes of the people have suffered very severely from the decay of their hereditary occupations. It may fairly be hoped that the opportunities given to visitors from other countries of seeing the perfection to which Indian manufactures can be brought, may render the International Exhibition of the current year valuable as a means of reviving interest in Indian fabrics and Indian art. Unsuccessful negotiations were in progress during the year with regard to some of the mines